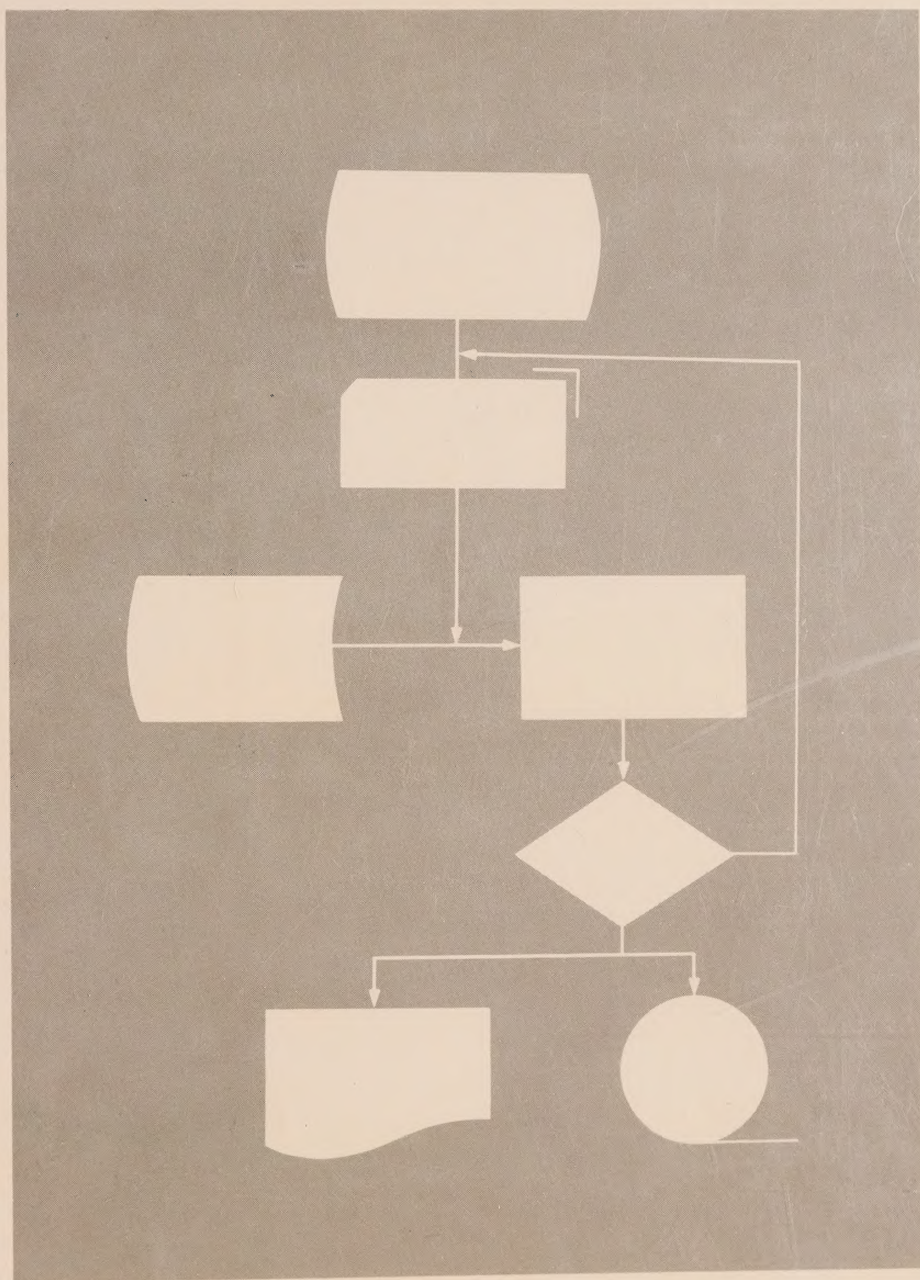


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Structural Economic Models

A users guide



Structural Analysis Division



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Users' Guide
to
Statistics Canada
Structural Economic Models

November 1974



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Foreword

The structural economic models described in this volume are fully operational and are available as analytical tools to both public and private organizations. These models are the first in what will be a series of models.

The descriptions of new models will be distributed as additional chapters of this volume as they become available. Among the new models will be an interregional input-output model, and a long term simulation model, as well as input-output and price models with improved methodology.

The work upon which this volume is based is the product of a great number of individuals and organizations. The focal point for the research is the Structural Analysis Division under the direction of R.B. Hoffman. The work of T. Gigantes is clearly visible in the input-output and price models. The proof of convergence presented in Appendix 4.4 was prepared by V. Chant of the Bureau of Management Consulting, Department of Supply and Services. This contribution is gratefully acknowledged. The text of this volume was prepared by R.B. Hoffman.

Enquiries should be directed to the Structural Analysis Division of Statistics Canada.



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1. General Introduction

One of the functions of the Structural Analysis Division of Statistics Canada is to develop and maintain structural economic models of the Canadian economy for the purpose of providing analytical services to both public and private agencies engaged in research for which the models are appropriate tools.

By operating these models, Statistics Canada makes available to government and to other agencies the results of calculations which could not be duplicated outside of Statistics Canada and at the same time avoids duplication of the efforts required to produce the results. These calculations would not otherwise be available because the parameters of the models are to a large extent confidential under the provisions of the Statistics Act. Even though these parameters are confidential, solutions of the model are not confidential and hence can be made available.

Furthermore, it is hoped that structural economic models will provide Statistics Canada with a coherent framework within which the program of economic statistics at the bureau can be evaluated and rationalized.

An economic model is a schematic representation of an economy, designed in such a way as to explain or predict economic behaviour. Because of the complexities of economic

behaviour and because of the inherent interdependence of economic phenomena, models of an economy are, of necessity, gross simplifications of the reality they represent. The design of economic models is constrained by computational limitations and by the lack of appropriately integrated data bases. Within these constraints an infinite number of models is possible. Accordingly, particular models are chosen on the basis of the objectives they serve.

Two classes of economy-wide models can be distinguished whose origins can be linked to combinations of constraints and objectives: macro-econometric models and input-output models.

Macro-econometric models are characterized by a relatively small number of complex relationships. Many of the relationships are estimated by means of time series analysis. These models have suffered because of the related problems of aggregation, identification, and multi-collinearity. As a result, they have tended to portray the inertia of economic events rather than the behaviour of economic agents. Thus, they have been more suitable for forecasting than for simulating the consequences of alternative events or policies.

Input-output models and their derivatives constitute the second class of economy wide models. These models are characterized by a mathematical structure which contains a relatively large number of simple relationships. The relationships are proportionalities derived from a cross-sectional data base. Because of the disaggregation and the more direct representation of behaviour, they are more suitable for analysing the impact of economic events or policy, although the simplicity of behaviour embodied in the simple relationships has cast doubt on the validity of the simulations.

The structural economic¹ models described in this report are more closely associated with the philosophy of input-output type models. In fact, the model building program of the Structural Analysis Division originated in the input-output program of Statistics Canada. Recent advances in computer technology are relaxing the constraints on the design of quantitative economic models. This new technology can handle such a large number of complex relationships that it is becoming feasible for economists to design models that depict the actual structure of the economy and can simulate the behaviour of the various economic agents.

Above all, structural models are disaggregated models. They should be able to distinguish a large number of economic agents, some of them on an individual basis, and to keep track of a large number of transactions among agents. As much disaggregation as possible is thought to be desirable, first of all, to avoid "aggregation error" which arises when a change in a variable merely reflects a change in the weights attached to composite units rather than a change in behaviour of units and, secondly, to provide analysts with variables sufficiently detailed as to represent actual instruments of policy and sufficiently detailed results.

We believe that such models should be specified in terms of structural forms rather than reduced forms, primarily because the parameters of structural forms can be more readily subjected to a priori validation. It is also easier to simulate changes in the structure because reduced form parameters are in principle a function of all of the parameters of the structural form. We argue that the usual validation test of econometrically estimated models of best-fit or 'trackability' over the sample period is a weak test for two reasons. First of all the specification of many relationships is chosen on the criterion of best-fit, particularly where lagged values of the dependent variable and independent variables with distributed lags enter the relationships. Secondly, 'trackability' over the sample

period gives no indication of how well the model performs under new values of exogeneous variable or hypothesized structural change.

It is to be expected that structural models will contain a variety of relationships and functional forms: equations estimated from both time series data and cross section data; accounting equalities such as the identities associated with input-output accounting frameworks or financial flow accounts; behavioural inequalities; technical relationships based upon engineering-type information; and a priori relationships. In general terms an attempt is made to identify the reaction or possible reactions of an economic agent to the values of a set of variables - the set of reactions being bounded by financial, technical or behavioural constraints. The concepts of feasible region and tension are important in determining likely behaviour and in obtaining indications of which constraints are most binding.

This document is intended to be a user's guide to Statistics Canada structural economic models. As such, each model is described in terms precise enough to give a user a full understanding of the model and to render the results interpretable. This users guide is not a users manual. The mechanics of obtaining a model solution are described elsewhere.

Chapters two and three are a prerequisite for all other chapters as they present the accounting framework and notation that is common to all of the models described in subsequent chapters.

FOOTNOTES

Section 1

- [1] For a more complete discussion of structural economic models, see Gigantes etal, 1973. -

2. The Accounting Framework

The Input-Output Tables for Canada contain two sets of inter-related accounts. The first details the supply of and demand for individual commodities (goods and non-factor services). The second contains the commodity outputs of industries and the complete costs of production of industries (including profits).

The presentation of accounts does not follow customary accounting practice. Individual accounts for each industry and each commodity, with debits on the left and credits on the right, are replaced by a tabular arrangement in which a single entry appears in two accounts at the same time - as a debit in the column and a credit in the row.

A major feature of the 1966 Input-Output Accounts is that the inputs and outputs of industries are presented in separate tables; both inputs and outputs are classified by commodity. Commodities are clearly distinguished from industries, the number of commodities exceeding the number of industries.

INDUSTRIES

INDUSTRIES		FINAL DEMAND CATEGORIES		COMMODITIES	
		CE	M&E, CON	GCE	
00100	Agriculture				00100 Cattle & Calves
18200	Misc. Services				
18300	O.S. Dummy				
19100	Misc. Dummy				
20001	CE Food				
20040	CE Exp. Abroad				
21001	M.&E. Agric.				
22500	Con. Govt.				
23020	Inv. R. M.				
23010	Inv. F.G.				
24001	GCE Health				
24030	CGE Fed.				
25000	Dom. Exports				
26000	Re-Exports				
27000	Less Imports				
70600	Tropical Fruit				
72000	Government Goods and Services				
71000	B. of P. Adj.				
72100	Indirect Commodity Taxes				
72200	Subsidies				
72300	Ind. Tax N-C				
73000	Wages & Salaries				
73340	Other Surplus				

TABLE 2 – PRODUCTION

COMMODITIES		INDUSTRIES					
		00100	Cattles & Calves				
	00100	Agriculture					
	1	.	.	.	.	.	.
	18200	Misc. Services					
	18300	Operating & Supplies Dummy	0				

	19100	Misc. Dummy	0				
	63000	Rental					
	63100	Spare Parts					
			0	.	.	.	.
	64200	Iron & Steel Dummy Com.	.	.	.	.	.
	70100	Cotton, Raw	0	.	.	.	.
	70600	Tropical Fruit	.	.	.	.	.
	72000	Government Goods & Ser.	0	.	.	.	.

2.1 The Commodity Accounts

The commodity accounts are shown in columns 00100 - 70600 in the Production table and in the corresponding rows of the disposition table. The supply of each commodity is subdivided into the production by domestic industries, the amount imported, and the amount supplied by government. The demand is subdivided into current or intermediate inputs into industries and into final demand - consumer expenditures, government expenditures, business fixed capital formation and exports.

It is customary to express the measures of inputs and outputs of commodities in Input-Output Tables on the same basis of valuation. Furthermore, in some applications of Input-Output analysis the transaction values of commodities are interpreted as proxies for the corresponding quantities. Thus, it is desirable that a dollar's worth of a commodity represent approximately the same quantity of the commodity in every part of the Tables.

Thus, all entries in the commodity accounts are valued at "producers prices". In the production table the producers' price is defined to be the selling value at the boundary of the producing establishment exclusive of any sales or excise taxes levied after the final stage of processing.

International input-output practice suggests that imports should be valued duty paid at the frontier of the importing country. In accordance with this practice, the producers' value of Canadian imports is greater than the Trade of Canada values by the cost of transportation to the border and by the duty collected on each import. In the disposition table, the producers' price is defined to be the purchase price less trade, transportation, and storage margins and commodity taxes such as sales and excise taxes. These margins and taxes are accumulated into separate rows of the table. Implicit in this valuation procedure is the assumption that the purchaser pays for the margins and taxes.

A number of commodities are not produced domestically - namely those commodities with identification numbers between 70100 and 70600 inclusive, and hence there are zero entries in the corresponding columns of the production table. These commodities we define to be non-competitive. It is to be noted that this definition of non-competitive commodities is without analytic significance because it is arbitrary and depends upon the level of aggregation in the system.

2.2 The Industry Accounts

The industry accounts are shown in rows 00100 - 19100 in the production table and in the corresponding columns of the disposition table. The total gross output of each industry, classified by commodity, is shown in the industry's row. The inputs of an industry are shown in the industry's column; these are subdivided into intermediate and primary inputs. Intermediate inputs consist of current account inputs of commodities consumed in the process of production; primary inputs consists of indirect taxes, wages and salaries, supplementary labour income, net income of unincorporated business and "surplus". In terms of components of the income side of the National Income and Expenditure Accounts, "surplus" is the sum of Capital Consumption Allowances and Miscellaneous Valuation Adjustments, Inventory Valuation Adjustment, Corporation Profits before taxes and dividend payments, and Interest and Other Investment Income (including interest paid to non-residents after deduction of interest received from non-residents.)

Industries in the input-output tables are classified according to the Standard Industrial Classification (1960 edition). For the most part the three digit level of the SIC is used although there is some aggregation in primary industries and service industries.

The Manual defines an industry as "establishments engaged in the same or a similar kind of economic activity". The establishment is defined for statistical purposes as "the smallest unit which is a separate operating entity capable of reporting all elements of basic industrial statistics". Typically the establishment is a factory, mine, store service outlet, etc.

The criterion for determining the economic activity of an establishment is the nature of its principal product or activity. The nature of the product is characterised according to either its purpose (e.g., transportation equipment) or the basis of the chief component material used in its production (e.g., wood products). Since purpose or use can be applied only in the case of manufactured articles that have been processed to the point where their main purpose is apparent, the choice of which criterion (chief component material or purpose) to employ depends on the stage of processing undertaken by the establishment. In the case where an establishment engages in several different activities, it is assigned to an industry class on the basis of its principal source of value added, or principle source of revenue where value added cannot be determined.

In one important aspect the concept of establishment used in the input-output tables differs from the SIC definition. The

own account new and repair construction activities of all establishments have been included in the construction industries of the input-output table.

The input-output accounts make use of two additional concepts of an industry - namely the "dummy industry" and the "activity".

The "dummy industry" is a technique for routing groups of commodities as inputs into industries when the precise commodity content is unknown. For instance, information on the purchase of office supplies is available from industrial surveys but there is no information on the commodity composition of office supplies. A dummy industry "office supplies" was created whose output was equal to the purchases of office supplies by industries and whose inputs are the appropriate values of paper, envelopes, etc. The Canadian input-output tables employ eight dummy industries of this type: these are industries 18300 - 19100.

The concept of "activity" is used in order to relax the assumption of industry technology¹ which is made in the Canadian models. Activities are associated with single industries or single establishments which produce more than one commodity or groups of commodities whose input patterns are different. The inputs which can be associated with the

production of these commodities or groups of commodities are allocated directly as inputs into activities. Those which cannot be associated with a particular output become inputs into a dummy industry whose output becomes an input into the activities. This technique is especially useful when there is vertical integration within establishments. In these cases, it is necessary to gross up flows from one activity to another as these outputs do not appear as shipments of the establishment.

At the present time the "activity" concept is used in two industries. In the iron and steel industry, coke ovens, blast furnaces, steel production, rolling mills, and ferro-alloy production are distinguished as separate activities. In the pulp and paper industry, pulp making, paper making and paper converting are distinguished.

The use of the concept of activities preserves the mathematical structure of the industry technology model, but achieves "mixed technology".² It is to be noted that the use of activities adds few new non-zero elements to the tables and, hence, does not add significantly to the computational burden (even though the dimensions of the tables increase dramatically).³

2.3 Relation to the System of National Accounts

Because the Input-Output tables form a part of the more comprehensive System of National Accounts, the measures of production of the Income and Expenditure Accounts, and their main components, can be calculated from the Input-Output Accounts by aggregating certain detailed parts of the latter. On the expenditure side, the relevant measure is Gross Domestic Expenditure at Market Prices.

$(GDE_m)^4$. The measure is "gross" because the cost of fixed capital consumed during the year has not been deducted. It is however, a "net" output measure, and therefore avoids duplication, to the extent that intermediate goods and services used by industries in the production of other goods and services are excluded. For example, the value of flour used by the baking industry to produce the bread which is purchased by persons is counted only once - as part of the value of the bread.

In the Income and Expenditure Accounts, GDE_m is estimated directly as the sum of final expenditures at market prices by persons, governments, industries (on capital account) and non-residents (exports), less total purchases of goods and services from non-residents (imports). These expenditure totals appear as the sums of the entries in the columns of

the Disposition Table which refer to final demand categories, personal expenditures on goods and services, government current expenditures, business and government capital expenditures, physical change in inventories, and exports less imports.

For the economy as a whole, the comparable measure of production on the income side of the Income and Expenditure Accounts is Gross Domestic Product at Market Prices (GDP_m). GDP_m is equal to the sums of the primary input rows in the Disposition Table -- adjustments, taxes less subsidies, wages and salaries, supplementary labour income, net income of unincorporated businesses and surplus.

Again, the measure of GDP_m avoids duplication by excluding the intermediate inputs of industries in the form of current account goods and services used in production; this is appropriate because, for each industry, these inputs represent the accumulated values of gross domestic product originating in the domestic industries at earlier stages of production, plus the value of foreign commodities (imports) used at earlier stages of production or directly imported by that industry.

The necessary identity of GDE_m and GDP_m is readily apparent from the following:

Total outputs of all industries

$$\begin{aligned} &= \text{total commodity outputs of all industries} \\ &= \text{total commodity supply} - \text{total commodity imports} \\ &= (a) \text{ total final demands} - \text{total imports} + \text{total} \\ &\quad \text{intermediate demands} \end{aligned}$$

Total outputs of all industries

$$\begin{aligned} &= \text{total inputs of all industries} \\ &= (b) \text{ total primary inputs} + \text{total intermediate inputs} \end{aligned}$$

Since (a) = (b) and since total intermediate demands = total intermediate inputs, subtraction of the duplication in output represented by the total of intermediate entries for both (a) and (b) gives:

$$\text{Total Final Demands} - \text{Total Imports} = \text{Total Primary Inputs}$$

The above equations do not provide for primary inputs related to final demand categories. Since these are, at the same time, both primary inputs and final demands, the identity of GDE_m and GDP_m is maintained when they are added in.

The most frequently used measure of output originating by industry is Gross Domestic Product at Factor Cost (GDP_f), which excludes indirect taxes but includes capital consumption allowances. There is no unique way of distributing indirect taxes by industry (this applies particularly to taxes on commodities). The industrial

distribution of indirect taxes shown in any set of Input-Output Tables is dependent on the conventions chosen for the "routing" and valuation of commodities in those Tables. Hence it is not possible to make a meaningful distribution by industry of Gross Domestic Product at Market Prices.

A reconciliation between the National Income and Expenditure Accounts and the input-output table, 1966 is presented in Appendix 2.4.

2.4 The System of Classifications

The industry, commodity and final demand classifications are presented in Appendixes 2.1, 2.2 and 2.3.

A five digit identification number is used for both the industry and commodity classifications.

For the industry classification, the first three digits of the identification number correspond to the IOIC-W classification published on page 168 of The Input-Output Structure of the Canadian Economy, 1961, Volume 1.

Accordingly, the published correspondence between the IOIC-W and the Standard Industrial Classifications (SIC) 1960 edition may be used in conjunction with the attached industry classifications. Two revisions to IOIC-W have been made

since publication: industry 183 has become "Operating Supplies Dummy Industry" combining "183" "Machinery Maintenance and Minor Repair Supplies" and "186" "Building Maintenance, Cleaning, Medical and Safety Supplies"; industry 186 has become "Transportation Margins Dummy Industry". The fourth and fifth digits of the identification number designate disaggregations of IOIC-W industries. Disaggregations have been made in the Construction, Finance, Insurance and Real Estate, Pulp and Paper, and Iron and Steel industries.

For the commodity classifications, the first three digits correspond to the three digits following the hyphen in the published IOCC-W classifications. Again two revisions have been made to the IOCC-W since publication; commodity 631 has become a combination of published 634 and 631; commodity 634 has become "Transportation Margins". The IOCC-W as published relates I-O classes to the Standard Commodity Classification, and as well, the Export Commodity Classifications and the Import Commodity Classification. Hence the precise content of each commodity class can be ascertained by reference to the SCC rulings.

Government goods and services and non-competing imports are considered to be intermediate commodities and hence are included in the commodity classifications. "Government Goods

and Services" consist of goods and services produced by government and sold as intermediate and final demand. These goods and services are non-competitive in the sense that they are not produced in the business or foreign sectors. The Classifications of primary inputs is as follows:

71000	Balance of Payments Adjustments
72100	Indirect commodity taxes
72200	Subsidies
72300	Indirect taxes, non-commodity
73000	Wages and Salaries
73100	Supplementary Labour Income
73200	Net Income of Unincorporated Business
73310	Depletion and Mining Write-offs
73320	Capital Cost Allowances
73330	Other Surplus ⁵

All of the primary inputs are precisely defined in terms of categories in the National Income and Expenditure Accounts. Reference should be made to DBS catalogue no. 13-502, National Accounts, Income and Expenditure, 1926 - 1956 and page 32 of The Input-Output Structure of the Canadian Economy, 1961, Volume 1.

For the purpose of facilitating use of the model suggestive rather than precise definitions are presented in what follows.

Balance of Payments Adjustments consists of items in the Balance of Payments for which a commodity distribution could not be obtained. Included in these items are travel expenditures, special trade transactions, freight and shipping.

Indirect Commodity Taxes are the taxes that make up part of the difference between purchasers' and producers' valuation. (Distribution and transportation margins make up the remaining difference.) Therefore indirect commodity taxes are distributed among industries under the convention that the purchaser pays the tax. These taxes include provincial sales taxes, federal sales taxes, excise taxes, gasoline taxes and amusement taxes.

Indirect Taxes include licenses, fees and permits, and real and personal property taxes.

Subsidies represent amounts contributed by governments toward current costs of production.⁶ The subsidies are shown in the industry receiving the payment and hence do not necessarily reflect the beneficiary of the subsidy.

Wages and Salaries are payments made from domestic production for labour services. They include payments in kind, bonuses,

commissions and military pay and allowances but exclude earnings from self-employment.

Supplementary Labour Income consists of payments made on account of labour services such as employers' contributions to pension funds, unemployment insurance and workman's compensation.

Net Income of Unincorporated Businesses includes accrued net income of farm operators from farm production and the net rental income of persons.

Depletion and Mining Write-offs represents depletion claimed by companies operating mines, oil and gas wells, or timber limits and the write-offs or amortization of pre-production or deferred developmental expenses by mining and oil companies.

Capital Cost Allowances is the amount of the write-offs of fixed assets claimed by companies and unincorporated businesses for tax purposes. As well it includes an estimate for depreciation of government fixed assets and personal dwellings.

Other Surplus is the residual between gross production and all of the intermediate and primary inputs mentioned above.

It includes corporate profits before tax and dividend payments, interest paid, inventory valuation adjustment, donations, less investment income received. This investment income is subtracted because it is not counted as gross production. Interest paid on government debt does not appear as "Other Surplus" originating in the government sector as it is treated as a transfer payment.

FOOTNOTES

Section 2

- [1] See Section 3 below.
- [2] See T. Gigantes, "The Representation of Technology in Input-Output Models", in A.P. Carter and A. Brody (eds), "Contributions to Input-Output Analysis", North-Holland Publishing Co., Amsterdam, 1970.
- [3] See Section 5 below.
- [4] The Input-Output Accounts are on a "domestic" basis; they are concerned with the costs of production of, and the expenditure on the output of, producing units in the domestic economy, regardless of the residence of the primary factors of production used by those producing units. The main tables of the Income and Expenditure Accounts are on a "national" basis - see Tables 1 and 2 of D.B.S., cat. #13-502 [1962] and of D.B.S., cat. #13-201 [annual]. The former publication contains the concepts, sources and methods of the currently published Income and Expenditure Accounts. Table 4 in each of these publications shows the relationship between Gross National Product and Gross Domestic Product. Aside from the "residual error of estimate" in the Income and Expenditure Accounts (there is no residual error in the 1966 Input-Output Tables), one must add incomes received from non-residents and subtract incomes paid to non-residents in order to move from the measure of Gross Domestic Product to that of Gross National Product.
- [5] For the purpose of the closed model "Interest and Dividends Paid to Households" is separated from other surplus.
- [6] Para. 75, D.B.S. Cat. #13-502, "National Accounts, Income and Expenditure 1926-1956".

3. Notation

Throughout this volume matrix algebra is used.¹ The production and disposition tables are simplified and somewhat re-arranged in order to set out the notation. The six government current production (revenue) columns are consolidated into a single vector.

Assuming j industries, k commodities, ℓ primary inputs and n categories of final demand, the following notation may be established.

V is a j by k order matrix showing the gross production of commodities by industries.

m is a k order vector of imports by commodities.

a is a k order vector of government production of commodities.

U is a k by j order matrix showing the use of commodities by industries as current inputs.

F is a k by n matrix of final demand categories by commodities.

x is a k order vector of domestic exports by commodity.

Y is a ℓ by j order matrix of primary inputs used by industries.

g is a j order vector of total outputs or alternatively total inputs of industries.

f is an n order vector of the totals of the final demand categories.

w is a scalar, total exports.

q is a k order vector of total domestic outputs of commodities.

$q+m+a$ is a k order vector of total supply or alternatively total disposition of commodities.

Two sets of identities emerge from the accounts: the total outputs of industries are equal to the total inputs of industries,

$$g = V_i = U'_i + Y'_i \dots\dots\dots 3.1)$$

and; the total supply of commodities is equal to the total disposition of commodities,

$$q + m + a = V'_i + m + a = U_i + F_i + x \dots\dots\dots 3.2)$$

where i 's are unit vectors of appropriate dimension, and primed matrices are transposed.

Throughout this volume a number of matrices of coefficients that are derived directly from the input-output accounts are used. These are defined below:

B is a k by j order matrix of intermediate input coefficients. It is obtained by dividing each of the elements in U by the appropriate industry totals in the vector g.

$$B = U\hat{g}^{-1} \dots\dots\dots 3.3)$$

H is an ℓ by j order matrix of primary input coefficients. It is obtained by dividing the matrix Y by the appropriate industry totals in the vector g.

$$H = Y\hat{g}^{-1} \dots\dots\dots 3.4)$$

D is a j by k order matrix of domestic market share coefficients. It is obtained by dividing each element in the matrix V by the appropriate commodity outputs in the vector q.

$$D = V\hat{q}^{-1} \dots\dots\dots 3.5)$$

C is a j by k order matrix of product mix coefficients. It is obtained by dividing each element in the matrix V by the appropriate industry totals in the vector g.

$$C = \hat{g}^{-1} V \dots\dots\dots 3.6)$$

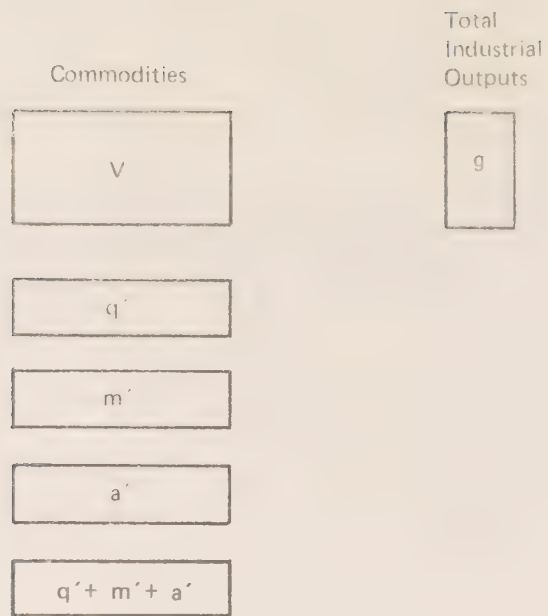
E is a k by n matrix of final demand converter coefficients. It is obtained by dividing the elements of the matrix F by the appropriate elements of the vector f.

$$E = F\hat{f}^{-1} \dots\dots\dots 3.7)$$

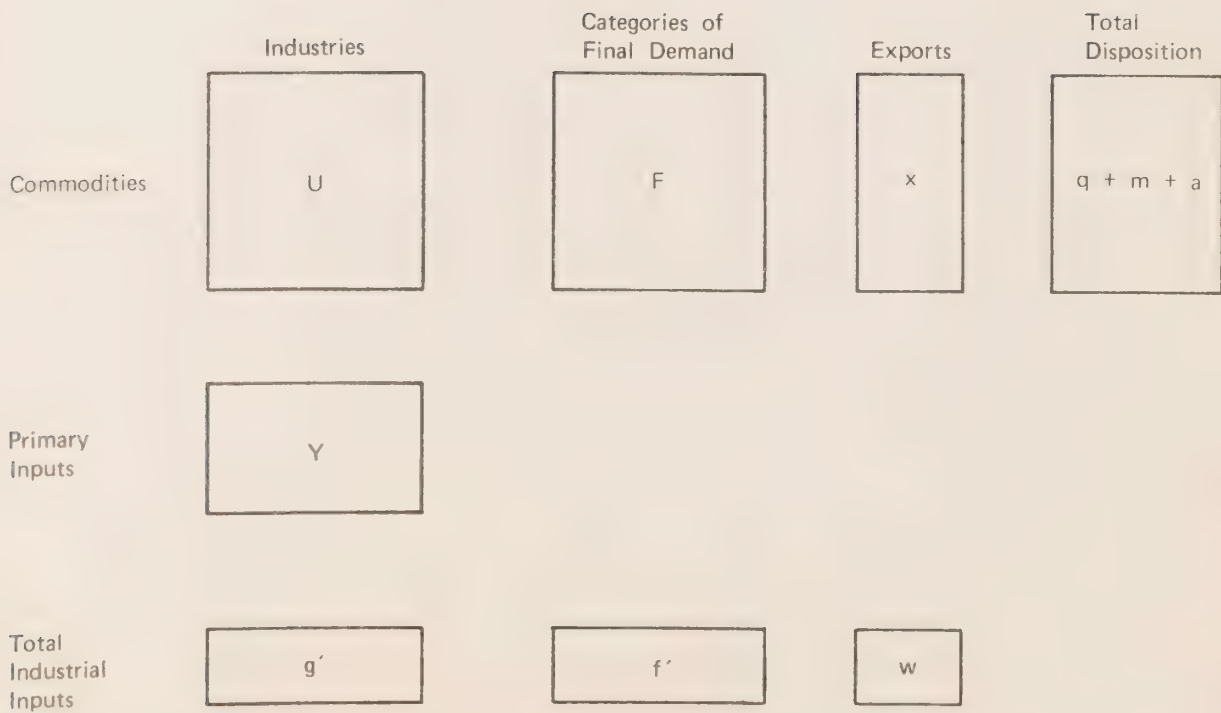
μ is a k order vector of import share coefficients. Each element in μ is the ratio of imports of a particular commodity to the total domestic use of the commodity.

$$\mu = (\widehat{Ui + Ei})^{-1} m \dots\dots\dots 3.8)$$

SUPPLY



DISPOSITION



FOOTNOTES

Section 3

- [1] For a non-mathematical description of the model, see Chapter 3 of "The Input-Output Structure of the Canadian Economy, 1961, D.B.S. Cat. #15-501.

4. Input-Output Models

4.1 The Output Determination Models

The Statistics Canada output determination models are 'input-output' models in the sense that they are direct descendents of the models associated with Professor Leontief of Harvard University.¹

Input-output models are characterized by the degree of industrial disaggregation - often as many as two or three hundred sectors and by their simple mathematical structure - reflecting the assumption that inputs into an industry are proportional to the output of the industry. The proportions are derived from an input-output table for a single year.

The Statistics Canada output determination models share with the more traditional input-output models a number of the characteristics mentioned above. The major difference arises from the commodity by industry accounting framework described in section 2.² In this framework, the one-to-one correspondence between industries and commodities associated with the Leontief models has been abandoned. Rather each industry is allowed to produce more than one commodity and each commodity may be produced in more than one industry. The Canadian accounting framework distinguishes in excess of

650 commodities and 200 industries, thus giving rise to "rectangular" data arrays.

The rectangular accounting framework allows a distinction to be made between marketing or supply relationships and technological or input relationships. Within this framework a variety of assumptions can be made concerning the marketing and technological behaviour.³

Input-output models have three distinguishable but related types of application or use.

First and foremost input-output models are models which analyse the propagation of demand throughout an economic system. For example, demand for an automobile generates demand in industries supplying the automobile industry which in turn generates demand for the suppliers of the suppliers. Each industry thus affected requires imports, labour and other factors. This kind of application of input-output models is the familiar 'impact' analysis which has given rise to a language of 'direct effects', 'indirect effects', 'employment multipliers', etc. Within this context, one can examine the impact of a large investment project, the impact of an industry, or the impact of producing additional products. This analysis is usually but not necessarily carried out under the assumption that supply is perfectly

elastic - i.e., that there is a sufficient supply of labour to support the hypothesized activity without curtailing any other activity, that capacity exists in industries without further investment, and that imports are available.

Secondly, input-output models are used as final demand converters. Categories of gross national expenditure, such as consumer expenditures, government expenditures, gross fixed capital formation, exports are converted or transformed into the income components of the accounts: labour income, indirect taxes, profits and depreciation by industry. In this context, the input-output model normally is a part of a larger system that forecasts or projects the final demand components. The Statistics Canada long term simulation model is an example of this kind of application.⁴

Finally, input-output models may be used to perform structural simulations, i.e., to investigate the impact of a change in the parameters of the model.

The Statistics Canada output determination models are comparative static models as are most input-output type models. This is to say that time is not represented directly in the models. The analysis involves the comparison of the economy as represented by a set of input-output accounts before a hypothesized final demand has occurred to the

situation resulting after all the effects have worked themselves through the system. On certain occasions, each round of indirect effects has been given a time interpretation. In general, this time interpretation is not legitimate as it ignores 'expectations' and stocks.

In the past, the question has arisen as to whether input coefficients should be interpreted as constant dollar (physical) ratios or as current dollar ratios. Under the former interpretation, the assumption of fixed coefficients is tantamount to assuming no substitution among current inputs in the process of production. In the latter case, unitary price elasticities of substitution among inputs is assumed. Analyses have been made to test the stability of coefficients over time. Their results are inconclusive; both assumptions show the same degree of stability. It follows from this discussion that input-output models may be given both current and constant dollar interpretations. If final demand is specified in current dollars, then results may be safely interpreted as current dollars. On the other hand, if final demand is specified in constant dollars, then results are in constant dollars. It is to be noted that employment coefficients can only be given a physical (constant dollar) interpretation.

Two versions of the output determination model are operational. One is the 'open' model in which incomes generated in process of production accruing to other sectors of the economy are not respent. All of the components of Gross National Expenditure constitute the exogenous final demand. The other version is the 'closed' model in which the incomes generated in the process of production accruing to households are spent on goods and services, taxes or savings. This version is in effect a partially closed model or a model that includes a consumer expenditure multiplier. In the 'closed' model consumer expenditures are calculated and hence are not a part of the exogenous final demand. Charts 4.1 and 4.2 present a diagrammatic representation of the open and closed models.

Chart 4.1 - THE OPEN MODEL

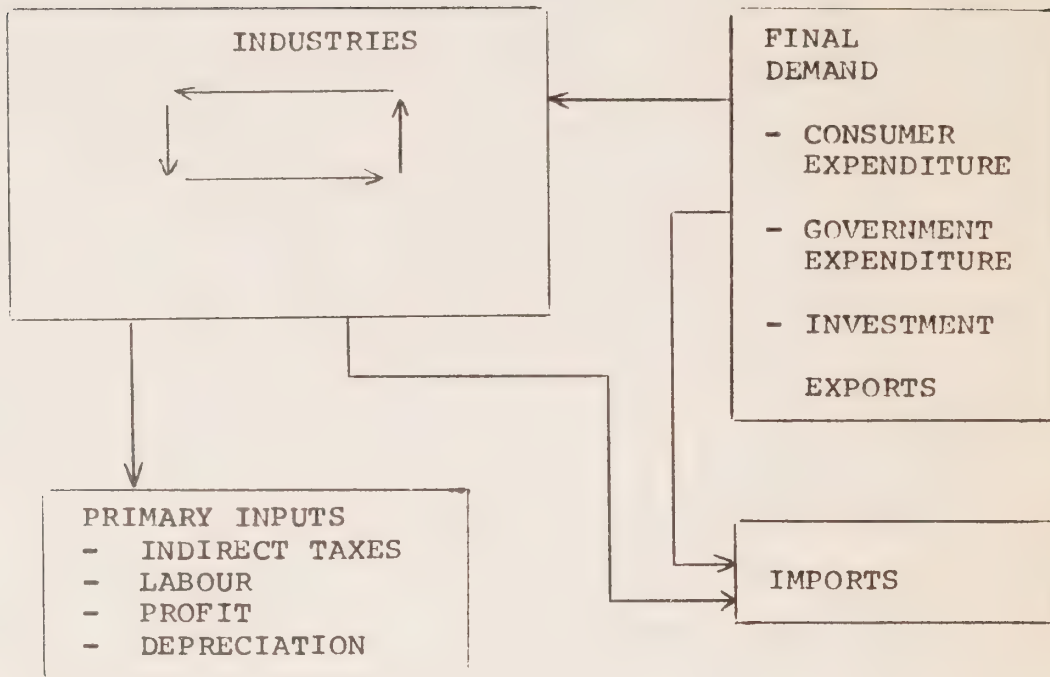
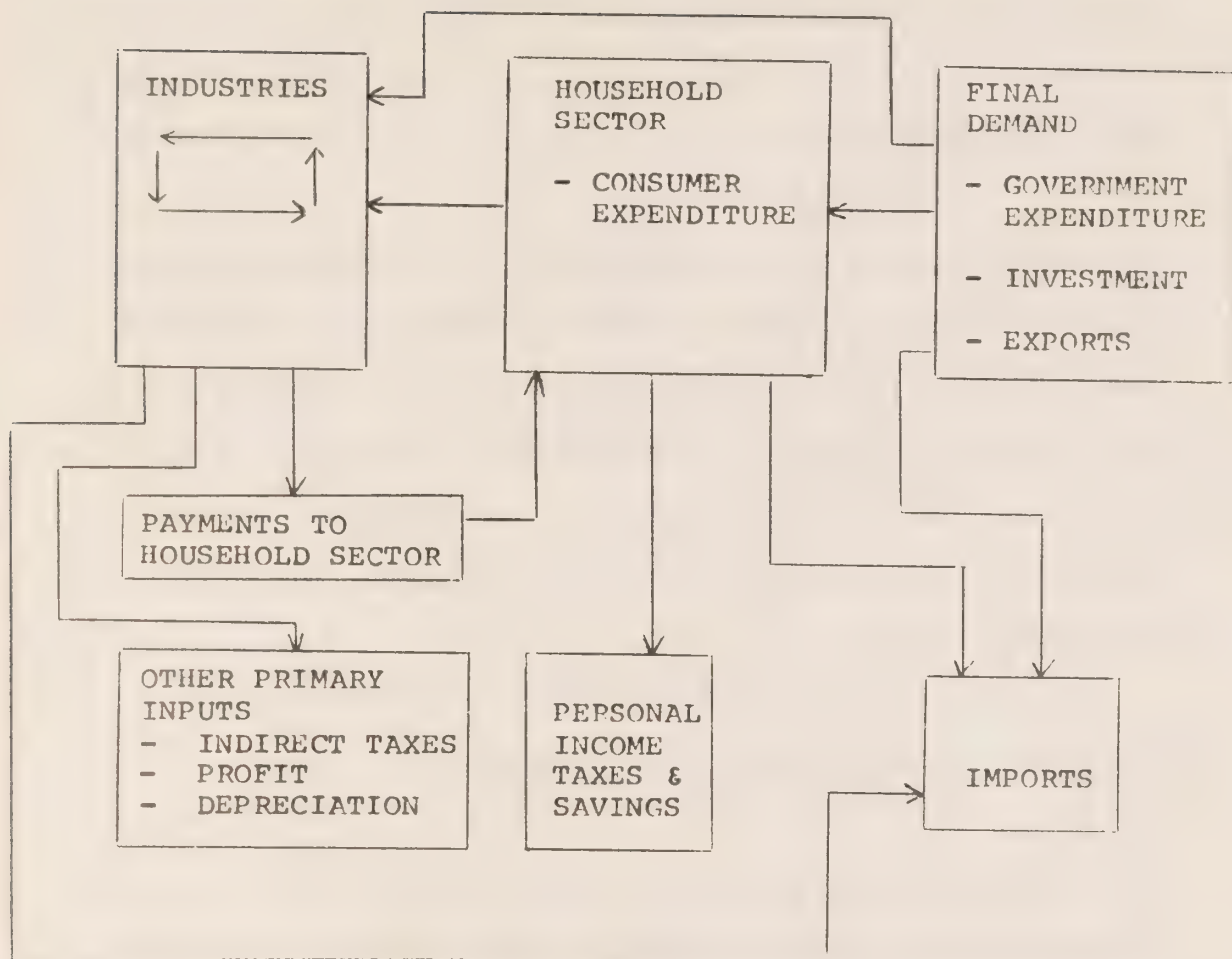


Chart 4.2 - THE CLOSED MODEL



Because input-output models are sets of linear equations, general solutions exist which express the unknown industry outputs as linear combinations of final demand. The general solution of an input-output model is known as the inverse of the Leontief matrix.

Statistics Canada output determination models do not make use of the general solution. Rather, a computer algorithm has been developed that calculates a single solution at a time. This feature is important in that the possibility for using non-proportional relationships are enhanced and in that the models can be efficiently used for examining the effects of parameter changes.

4.2 An algebraic expression of the model

The Statistics Canada output determination models have the mathematical structure of input-output models under the assumptions of industry technology and fixed market shares. However, the introduction of 'activities' and 'customer specific shares' relax these assumptions without changing the mathematical structure.

The current output models require five sets of structural parameters. These parameters are obtained directly from the

input-output tables of a particular year, as simple ratios or proportionalities.

Industry Technology

It is assumed that current inputs into each current industry are proportional to the output of the industry.

$$u_{ij} = b_{ij} g_j$$

i.e., the input of the i th commodity into the j th industry, u_{ij} , is a proportion b_{ij} of the output of the j th industry, g_j .

Also

$$y_{kj} = h_{kj} g_j$$

i.e., the input of the k th primary input into the j th industry, y_{kj} , is a proportion, h_{kj} , of the output of the j th industry g_j .

The matrices of coefficients B and H , as defined in equations 3.3 and 3.4 embody the assumption of industry technology.

It is to be noted that under the assumption of industry technology, inputs into an industry are invariant to the mix of commodities produced in the industry.

Market Shares

It is assumed that demand for domestically produced commodities is allocated among industries according to fixed market shares.

$$v_{ji} = d_{ji} q_i$$

i.e., the j th industry's output of the i th commodity is a fixed share, d_{ji} , of total amount of the i th commodity produced in domestic industries q_i .

This assumption of fixed domestic market shares is embodied in the matrix of coefficients, D , as defined in equation 3.5.

It is assumed that imports of a commodity are a fixed share of the domestic demand or disappearance of the commodity.

$$m_i = \mu_i \left(\sum_j u_{ij} + \sum_k f_{ik} \right)$$

i.e., the imports of the i th commodity, m_i , are a fixed proportion, μ_i , of intermediate demand for the i th commodity in all industries $\sum_j u_{ij}$ plus the domestic final demand for the i th commodity $\sum_k f_{ik}$.

The import share assumption is embodied in the vector of coefficients μ as defined in equation 3.8.

It is to be noted that this import share assumption implies that exports of a commodity are supplied from domestic

industries that produce the commodity. Of course, exports may have imports indirectly embodied in them to the extent that producing industries import their intermediate inputs.

The final set of market share coefficients is concerned with the share of a commodity market satisfied by government production of commodities of the type produced by the business sector or imported. It is assumed that the government share is a proportion of the total demand or disappearance of each commodity.

$$a_i = \alpha_i \left(\sum_j u_{ij} + \sum_k f_{ik} + x_i \right)$$

i.e., government production of the i th commodity, a_i , is a proportion, α_i , of the sum of intermediate use of the i th commodity, $\sum_j u_{ij}$, the domestic final demand of the i th commodity, $\sum_k f_{ik}$, and exports of the i th commodity, x_i .

These government share coefficients are defined as follows:

$$\alpha = \left(U_i + F_i + x \right)^{-1} a \quad 4.1$$

This treatment of government production of commodities implies another leakage to the system. It is to be noted that the inputs required to satisfy this production are part

of exogenous government expenditures and hence are not related to the level of production in the model.

Appropriate substitution into the identities yields the following set of basic equations:

$$q + m + a = Bg + Fi + x \quad 4.2$$

i.e., the supply of commodities is equal to the intermediate plus final demand for commodities.

$$g = Dq \quad 4.3$$

i.e., industry outputs are a linear combination of commodity outputs, the weights being the market share coefficients.

From the definitions of import and government share coefficients it follows that:

$$m = \hat{\mu} Bg + \hat{\mu} Fi \quad 4.4$$

and

$$a = \hat{\alpha} Bg + \hat{\alpha} Fi + \hat{\alpha} x \quad 4.5$$

Substituting 4.4 and 4.5 into 4.2 and rearranging.

$$q = (I - \hat{\mu} - \hat{\alpha}) Bg + (I - \hat{\mu} - \hat{\alpha}) Fi + (I - \hat{\alpha}) x \quad 4.6$$

The set of $j + 3k$ equations formed by 4.3, 4.4, 4.5 and 4.6 may be solved for g , q , m and a , in terms of Fi and x given parameters D , B , μ and α .

By substituting equation 4.6 into equation 4.3 and rearranging

$$g = [I - D(I - \hat{\mu} - \hat{\alpha})B]^{-1} D[(I - \hat{\mu} - \hat{\alpha})F_i + (I - \hat{\alpha})x] \quad 4.7$$

Vectors q , m and a may then be obtained from expressions 4.6, 4.4 and 4.5, respectively and the matrix of primary inputs by industry may be obtained as follows:

$$Y = H\hat{g} \quad 4.8$$

For certain applications, it is convenient to specify final demand in terms of the categories of national expenditure used in the National Income and Expenditure Accounts rather than in terms of commodities. This can be accomplished if the assumption is made that the commodity composition of each category is stable. Under this assumption, a matrix of final demand converter coefficients may be calculated as follows:

$$E = F\hat{f} \quad 4.9$$

for domestic final demand and a vector

$$r = xw^{-1} \quad 4.10$$

for exports.

Then

$$F_i = E\hat{f} \quad 4.11$$

and

$$x = rw \quad 4.12$$

The system of equations consisting of equations 4.3, 4.4, 4.5, 4.6, 4.11 and 4.12 can be solved for g , q , m , a , F_i , and x in terms of f and w . For example:

$$g = [I - D(I - \hat{\mu} - \hat{\alpha})B]^{-1} D[(I - \hat{\mu} - \hat{\alpha})Ef' + (I - \hat{\alpha})rw] \quad 4.13$$

4.3 The Closed Model

A version of the input-output model has been developed which is closed with respect to household incomes. In this model the incomes accruing to households that are generated in the process of production are spent on goods and services, taxes or saved. Consumer expenditures are calculated in the model and are not a part of the exogenous final demand.

The major difference between the open and closed models is the accounting systems. The accounts upon which the open model is based are consolidated. That is, transfers of income among sectors are not shown as they do not affect total production in the system. For the closed model transactions between the household sector and the other sectors of the economy are not consolidated. Transfers of income to the household sector are shown explicitly. This item includes unemployment insurance benefits, old age pensions, family allowance, etc. Transfers of income from the household account, namely personal income taxes are also shown explicitly. The difference between total income and total outlay in the household accounts is personal savings.

The mathematical structure of the closed model is similar to that of the open model. In the closed model households are an "industry" which "produces" labour and capital services. These labour and capital services are intermediate inputs into industries.

The production matrix, V , is thus augmented by one row and five columns. The entries in the intersection of the new column and rows show the "production" of wages and salaries, supplementary labour income, net income of unincorporated businesses, investment income, and transfer income by household "industry".

INDUSTRIES	<u>COMMODITIES</u>				
	Wages & Salaries	SLI	NIUB	Investment Income	Transfers from Gov't
V	0	0	0	0	0

<u>HOUSEHOLDS</u>	0 0	x	x	x	x

The intermediate input matrix, U , is augmented by corresponding rows and columns. The entries in the household

column are consumer expenditures on goods and services. This column of "inputs" into the household industry is obtained by summing the 40 consumer expenditure columns of the final demand matrix. The rows, wages and salaries, supplementary labour income, and net income of unincorporated business are identical to the corresponding rows in the primary input matrix of the input-output accounts. Because transfers to persons are an outlay of the government sector, the transfer row is null in the augmented intermediate input matrix. The entries in the row "investment income" reflect that part of surplus which are interest or dividend payments to Canadian residents.

Because the amount of investment income accruing to the household sector originating in each industry cannot be observed, it is assumed that this investment income is the same proportion of "Other Surplus" in each industry. There is one exception to this treatment for allocating the household sector's investment income to originating industries: the proportion in the "Royalties on Natural Resources" industry accruing to households differ because it is known that most of these royalties are paid to governments.

Augmented Intermediate Input Matrix
INDUSTRIES

COMMODITIES

	U															Households	
Wages and Salaries	x.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	x	x
SLI	x.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	x	x
NIUB	x.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	x	x
Investment Income	x.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	x	x
Transfers	0	.	.	.	.	.	.	.	.	.	.	.	.	.	0	0	0

The primary input matrix is augmented by two new rows, personal income taxes and personal savings, each of which have entries only in the household column.

The closed input-output model is based upon these augmented production and intermediate input matrices and is formed in the same way as the open model using the same sets of assumptions.

Concerning the behaviour of the household sector, these assumptions imply that the marginal propensity to consume is equal to the average propensity to consume and that the

pattern of expenditure is the same irrespective of the kind of income.

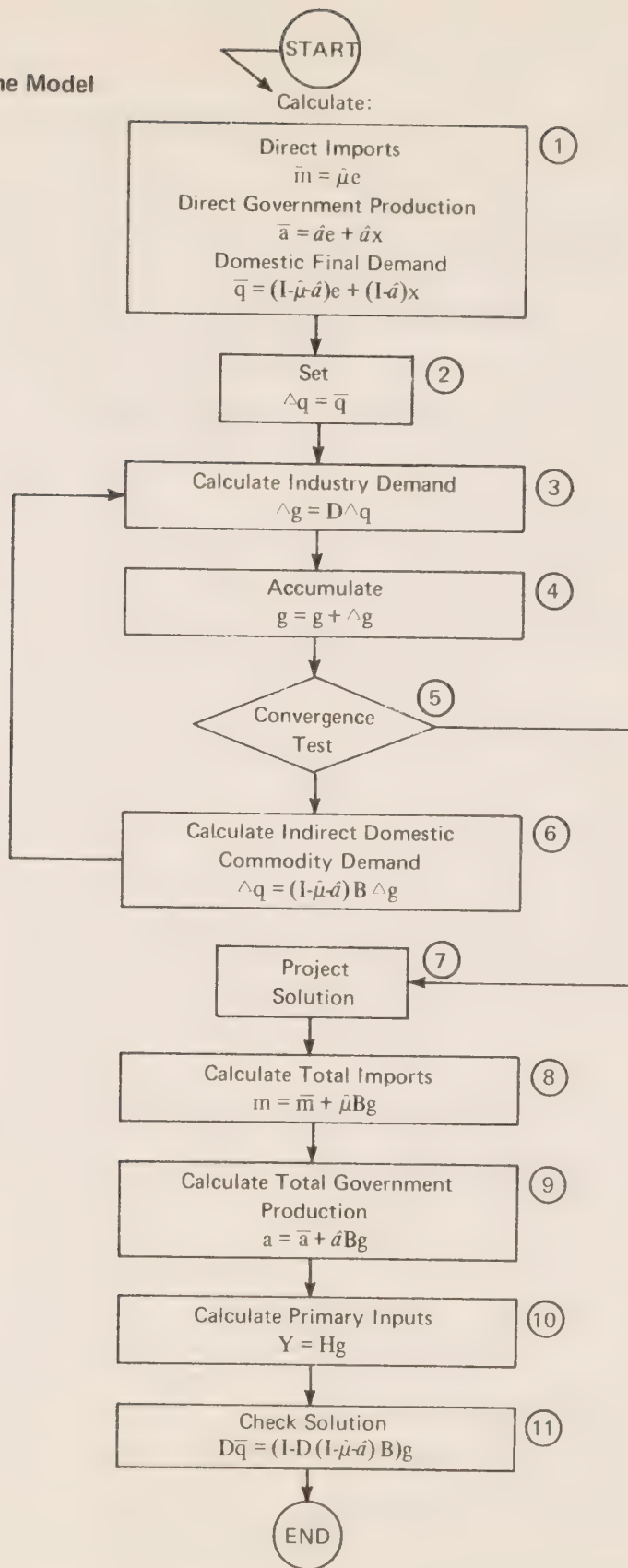
Thus the solution of the closed model may be represented by equations 9) to 12) substituting augmented parameter matrices for D , B , μ , α . The $(J + 1)$ th element in the augmented q vector is then the activity level in the household "industry" and the $(K + 1)$ th to $(K + 5)$ th elements in the augmented q vector are the domestic outputs of the "commodities" produced by the household "industry".

4.4 The Operational Models

From an operational point of view, the Statistics Canada input-output models consist of data files, computer programs, and the procedures for executing the programs at a computer installation.

A single solution of the model may be thought of in terms of the steps depicted in chart 4.5.

Chart 1
The Solution of the Model



4.4.1 Final Demand Preparation

The computer programs that are used for final demand preparation offer the user considerable flexibility in setting up a final demand vector and in calculating direct imports and direct government production.

Normally, final demand is specified in terms of commodities or groups of commodities. For the complete list of commodities and their identification number see Appendix A.

Once the final demand vector (e) has been established, it is allocated among sources of supply. The available sources of supply are domestic industries, imports, and government production. In the absence of intervention ($I - \hat{\mu} - \hat{\alpha}$) e will be directed to the domestic producers, $\hat{\mu}e$ will be directly imported, and $\hat{\alpha}e$ will be produced by government where $\hat{\mu}$ and $\hat{\alpha}$ are the diagonal matrices of import share and government production share coefficients respectively as defined in Section 3.

The user may intervene in this allocation process by overriding values in $\hat{\mu}$ and $\hat{\alpha}$. For instance, the user may direct all of the final demand to domestic producers by setting appropriate import and government share coefficients equal to zero.

It is important to note that for commodities that are not domestically produced the sum of the corresponding import share and government production share coefficients must be equal to one,

i.e. if $\sum_i d_{ij} = 0$ for the j^{th} commodity
where d_{ij} is the element in the i^{th} row and j^{th} column of the domestic market share matrix D

then $\mu_j + \alpha_j = 1$

If this condition is not met the model solution will not balance because demand will not have been satisfied.

It is also important to note that the import and government production share coefficients that are used to allocate final demand among sources of supply may be different from the coefficients used to allocate intermediate demand among sources of supply.

Under certain circumstances it is convenient to use the column of inputs into an industry or group of industries as the final demand vector. Then by altering the import coefficients the impact of a change in the import share of materials used in the industry can be examined.

The portion of final demand that is directed to domestic industries - namely $(I - \hat{\mu} - \hat{\alpha})e$ - is then allocated among the domestic industries according to the proportions in the

domestic market shares matrix, D. In this case as well the domestic market shares used to allocate final demand among industries may be different from those used to allocate intermediate demand among industries. This feature is commonly used to direct the final demand for a particular commodity to a single industry.

Final demand may also be specified in terms of categories of final demand. The categories of final demand are the components of gross national expenditure (GNE) that are distinguished in the National Income and Expenditure Accounts. See Appendix C for a complete list of final demand categories. The final demand specified in terms of categories or groups of categories, f , is converted into demand by commodity by means of the converter matrix F which is defined in section 3 and is then allocated among sources of supply. Accordingly, $(I - \hat{p} - \hat{\alpha}) Ff' + (I - \hat{\alpha}) rw$ is allocated to domestic industries, $\hat{p}Ff'$ is directly imported, and $\hat{\alpha}Ff' + \hat{\alpha}rw$ is produced by government. It is to be noted that the direct import share of exports is assumed to be zero. This procedure serves to connect the input-output model to available time series, and hence is mainly used for forecasting or projection applications.

4.4.2 Parameter Preparation

In general, the coefficient matrices required for the model solution are calculated from the input-output tables for 1966 as suggested in equations 3.3, 3.4, 3.5, 3.7 and 3.8 of section 3.

When the parameter arrays (D , B , μ , d , E , r) are calculated exclusively from the 1966 tables, the arithmetic of the model may be validated by executing the model with 1966 actual final demand and observing that the calculated variables are within rounding error of their corresponding real counterparts. Such a solution is presented in Appendix 4.5

Preliminary observation of the import coefficients (μ) are available for the years 1962 to 1967. A composite set of import coefficients has been created which uses the average value of the coefficients over the time series if no trend is observed and the 1967 value if a trend is observed. This composite set of import coefficients may be used in the model as an option to be specified by the user.

Because the model calculates a single solution at a time, changes in the coefficient arrays can be handled without the calculation of a new inverse. Accordingly, user-defined changes in any of the coefficient matrices are allowed.

Additional software is being developed which will simplify the process of introducing new coefficients. Developments are planned which will allow the user to insert new industries and commodities into the system on a temporary basis.

4.4.3 Model Solution

In conceptual terms, the solution of the models is identical to those developed in sections 3 and 4. However, the solution of the system is significantly different from a computational point of view.

The most distinguishing characteristic of the computer algorithm is that it does not calculate or make use of an inverse or impact table such as that set out in equation 12 of section 3 or those published in The Input-Output Structure of the Canadian Economy, 1961. Rather the computer system calculates a single solution at a time, thus abandoning the idea of a general solution.

This approach was chosen for reasons of computational efficiency and flexibility for changing parameter arrays. The large arrays of parameters required by the model - namely the input coefficients, the domestic market share coefficients, and the final demand converter coefficients,

are stored and manipulated in "compact" form. The main feature of "compact" form is that only the non-zero elements in the arrays are handled. A matrix is represented by three vectors; a vector of the non-zero elements taken row by row, a vector whose elements are the column identification of the corresponding elements in the first vector, and a vector whose elements are the number of elements in each row of the matrix. The number of elements in each of the first two vectors is equal to the number of non-zero elements in the original matrix and the number of elements in the third vector is equal to the number of rows in the original matrix. The expression of matrices in compact form is significant for input-output calculations because the coefficient arrays are extremely sparse. Because inverse matrices are by nature not sparse, it is more efficient to store sparse parameter matrices and to calculate single solutions using them rather than to store and manipulate inverse matrices.

As well it is to be noted that the use of a single solution procedure avoids the necessity of recalculating an inverse matrix each time the coefficient arrays are changed. Accordingly, the single solution system is convenient for analysing the impact of changes in the structure of the economy.

The solution of the model is achieved by means of the iterative process set out in Chart 1.

Block 1 allocates final demand among direct imports, \bar{m} , direct government production of competitive commodities, \bar{a} , and domestic final demand, \bar{q} , according to the procedures and options described under the heading of Final Demand Preparation.

Block 3 allocates the domestic final demand, \bar{q} , among industries according to the domestic market share coefficients.

Block 6 then calculates the indirect domestic commodity production required as inputs in order to satisfy the additional demand.

These additional demands, Δq , for domestically produced commodities are allocated among industries in Block 3.

The system iterates over Block 3 to Block 6 inclusive. At each iteration the increments to industry outputs, Δg , are accumulated in the g vector. This occurs in Block 4. Intuitively convergence is assured in so much as the increments to industry outputs diminish from iteration to iteration because of the leakages to imports and primary

inputs that take place at each iteration. A mathematical proof of convergence is supplied in Appendix 4.4.

The iterations proceed until a measure of the average increment in industry outputs is approximately equal to increment in each industry output. More precisely, when a prespecified tolerance,

$$\epsilon \geq \frac{\sum_{j=1}^n \frac{x_j}{1-x_j} \Delta g_{ij}}{\sum_{j=1}^n \Delta g_{oj}}$$

where $j = 1 \dots n$ and there are n industries

and $i = 1 \dots k$ and there are k iterations

and $x_j = r_j - \bar{r}$

$$\text{where } r_j = \frac{\Delta g_{ij}}{\Delta g_{i-1, j}}$$

$$\text{and } \bar{r} = \frac{\sum_{j=1}^n \Delta g_{ij}}{\sum_{j=1}^n \Delta g_{i-1, j}}$$

convergence is assured and a solution is calculated in Block 7. The solution for industry outputs is the sum of the increments to industry outputs up to the iteration in which the tolerance is met plus a projected increment. For the j^{th} industry

$$g_j = \sum_{i=1}^k \Delta g_{ij} + \frac{r_j}{1-r} \Delta g_{kj}$$

where k is iteration in which the tolerance is met.

Given industry outputs, g , Block 8 and 9 calculate total imports and total government production respectively by adding direct requirements to indirect requirements.

Block 10 calculates primary inputs by industry.

Block 11 checks the solution by running the system in reverse, that is by calculating domestic final demand from the calculated industry output levels.

4.4.4 Report Generation

The output of the model system takes the form of a report that consists of six sections. In general, the form of the report depends upon the options used to prepare the final demand and on the model used (open or closed). As well, some information concerning the operation of the system are printed.

Part A: Commodity Space

The commodity space results consist of five vectors. These are total final demand, domestic final demand, \bar{q} , direct imports, \bar{m} , total import, m , and total domestic output, q . These results are available in two standard levels of

aggregation - 680 commodities or 96 commodities. See Appendixes A and D for a listing of the classifications and the correspondence between them. It is to be noted that when the closed model is used, there are entries in the total domestic output vector "q" in the rows, wages and salaries, supplementary labour income, net income of unincorporated businesses, surplus and transfers. This occurs because these "commodities" are produced in the "household industry". Only the part of surplus that accrues to households is reported in the "q" vector.

Part B: Industry Space

Results in industry space are available at two levels of aggregation - 211 industries or 43 industries. See Appendixes B and E for listings of the classification and the correspondence between them. For results in both commodity and industry space non-standard or user-defined aggregations can be obtained by defining user-specific classifications in terms of the 680 commodities and/or 211 industries. It is to be noted that "households" appear as an industry in the industry space results for solutions of the closed model. Seven columns of results are printed in industry space.

The first column is "Domestic Final Demand". This represents the amount of final demand supplied directly by each industry. It is to be noted that the sum of this column may

be other than the sum of "Domestic Final Demand" in commodity space, because some of the primary input commodities are not produced in a domestic industry.

The second column is "Total Domestic Output" or industry activity levels, q . The sum of this column is equal to the sum of the "Total Domestic Output" column in commodity space.

The next four columns present the components of value added in each industry. Indirect Taxes less Subsidies consist of "Indirect Commodity Taxes" and "Indirect Non-Commodity Taxes" less "Subsidies". "Wages and Salaries" and "Supplementary Labour Income" are combined into a single column. For a more detailed description of the primary input categories see Section 2.

The seventh column presents employment in man-years. This calculation is based upon employment coefficients which relate employment in man years to the level of output. The employment estimates are for paid employees only and do not include self-employed. At the present time, these employment coefficients are based upon 1966 data and hence reflect average annual earnings in 1966. If final demand is specified in other than 1966 dollars, these employment coefficients would require user-specified adjustments for changes in average annual earnings.

The number of categories distinguished on the expenditure side of the account depends upon the procedures used to specify demand and whether the open or closed model is used.

If the open model is used and final demand is specified in terms of commodities, the expenditure side of the account is:

Final Demand

- Imports less duties
- Government revenue from production

If the open model is used and final demand is specified in terms of final demand categories, the account is:

Consumer expenditure

Government current expenditure

Investment expenditures

Inventory change

Exports

- Imports less duties
- Gov't revenue from production

If the closed model is used and final demand is specified in terms of commodities, the account is:

Consumer expenditure

Final demand

- Imports less duties
- Government Revenue from production

If the closed model is used and final demand is specified in terms of categories of expenditure, the account is:

- Consumer expenditure
- Government current expenditure
- Investment expenditure
- Inventory change
- Exports
- Imports less duties
- Government revenue from production

Final demand, as it appears in the income and expenditure account is the sum of the "Total Final Demand" column in section A.

Consumer expenditure, when the closed model is used, is calculated as a proportion of the household industry activity level. Consumer expenditure (if the open model is used), Government current expenditures, Investment expenditures, Inventory change and exports together sum to the sum of the Total Final Demand column.

Imports less duties consist of the sum of the total imports from Section A less calculated import duties. Duties are subtracted because imports are valued duty paid. The duty calculation is described under Section E of the report.

Government Revenue from Production consists of the intermediate and final demand components of the Government Goods and Services Row plus direct and indirect government production of competitive commodities as calculated in Block 9 of Chart 1.

The Income side of the Consolidated Income and Expenditure Accounts is as follows:

Wages, Salaries, Supplementary Labour Income

Net Income of Unincorporated Businesses

Surplus

Gross Domestic Product at Factor Cost

Taxes and Duties less Subsidies

Adjustments

The first three lines of this account consist of the intermediate components (appropriate column sums in Section B), plus the final demand components (appropriate elements from the total final demand vector in Section A).

Gross Domestic Product at Factor Cost is a subtotal of the first three lines.

Taxes and Duties less Subsidies consists of the intermediate and final demand components of "Indirect Commodity Taxes",

"Indirect Non-Commodity Taxes" plus import duties as calculated in Section E less subsidies.

Adjustments consists of the "Balance of Payments Adjustments". For a description of this item, see page 100 in The Input-Output Structure of the Canadian Economy, 1961, Volume 1.

Part C: Household Account

The Household Income and Outlay Account appears only for solutions of the closed model.

The Expenditure side of the account consists of the following lines:

Consumer Expenditures on Goods and Services

Personal Income Taxes

Personal Savings

Other Transfers to Governments

Other Transfers

All of the expenditure items are calculated as proportions of the "Household" industry activity level in Section B of the report. Other transfers to Governments includes contributions to government pension plans, gift taxes, and succession duties. Other transfers includes payments abroad.

The income side of the account consists of the following lines:

- Wages and Salaries
- Supplementary Labour Income
- Net Income of Unincorporated Businesses
- Investment Income
- Exogenous Income

All of the income items are taken from the appropriate rows of the "Total Commodity Output" column in Section A of the report. It is to be noted that Exogenous Income is a parameter in the model. Normally it is set at zero.

Part D: Government Revenue

The Government Revenue section of the report brings together all the government revenues that are related to activities represented in the model. These are:

- Commodity Taxes
- Non-Commodity Taxes
- Government Revenue from Production
- Resource Taxes
- Import Duties
- Personal Income Taxes
- Corporation Taxes
- Other Transfers from Households
- Less Subsidies

Neither Personal Income Taxes nor Other Transfers from Households appear when the open model is used.

Commodity Taxes and Non-Commodity Taxes are the intermediate and final demand components of the corresponding primary input rows of indirect taxes.

Government Revenue from Production is revenue accruing to governments from the sale of intermediate goods and services.

Resource Taxes are calculated as a proportion of the surplus generated in industry 16820, "Royalties on National Resources" - namely the portion of royalties that accrue to governments. According to national accounting concepts royalties on natural resources reflect economic rent and here are treated as contributing to national product.

Import Duties are calculated by multiplying each import by an import duty coefficient and summing all of the duty. The calculated figure is gross of rebates.

Personal Income Taxes are reproduced in this account from the Section D: Household Account.

Corporation Taxes are calculated as a proportion of the sum of "Other Surplus".

Other Transfers from Households corresponds to the fourth line in the expenditure side of the Household Account.

Part E: Business Sector Account

The business sector account consolidates all of the industries in the business sector. The information relating to the dummy industries 18300 to 19100 is excluded in order to avoid artificial double counting. The industries such as "Iron and Steel" and "Pulp and Paper" that were sub-divided into "activities" are reconsolidated so that the production figures will represent production for shipment outside of the producing establishment. For solutions of the closed model the "Household" industry is excluded from the business sector.

The income side of the business sector account consists of two items:

Gross Production

Subsidies

It is to be noted that where final demand consists of the inputs into an industry, a parameter called the "industry switch" may be set which will include the final demand in the appropriate lines in the Business Sector Accounts.

Gross Production is a measure of the goods and services produced by establishments in the business sector for use as intermediate inputs in other establishments or for final use.

The expenditure side of the business sector account consists of the following items:

- Intermediate Goods and Services
- Indirect taxes
- Wages, Salaries, Supplementary Labour Income
- Net Income of Unincorporated Business
- Interest and Dividends Paid to Persons
- Depletion and Mining Write-offs
- Capital Cost Allowance
- Other Surplus

4.5 Output Model Sample Results

Four sample solutions of the output model are presented in the following section. The full computer generated reports are included as Appendixes 4.5, 4.6, 4.7 and 4.8. All of the commodity and industry space results are presented in terms of the aggregated industry and commodity classifications. (See Appendixes 4.1 and 4.2.)

Output Model Solution #1:

1966 Closed Model Balance.

This is a model solution for which the final demand was the actual final demand in 1966. In this case the calculated values of industry and commodity results are equal to the observed values in 1966. Accordingly, this run serves to set out appropriate parts of the 1966 input-output tables and may be used as a benchmark for solutions designed to be a change from 1966 values. This balancing run also serves to 'validate' the model, but in a mechanical sense only. For the purpose of obtaining a balancing solution, it is necessary to use coefficients derived directly from the 1966 input-output tables and left unadjusted.

Output Model Solution #2:

Impact Analysis of 1.0 Million Exogenous Household Income.

This is a closed model solution that isolates the household income multiplier.

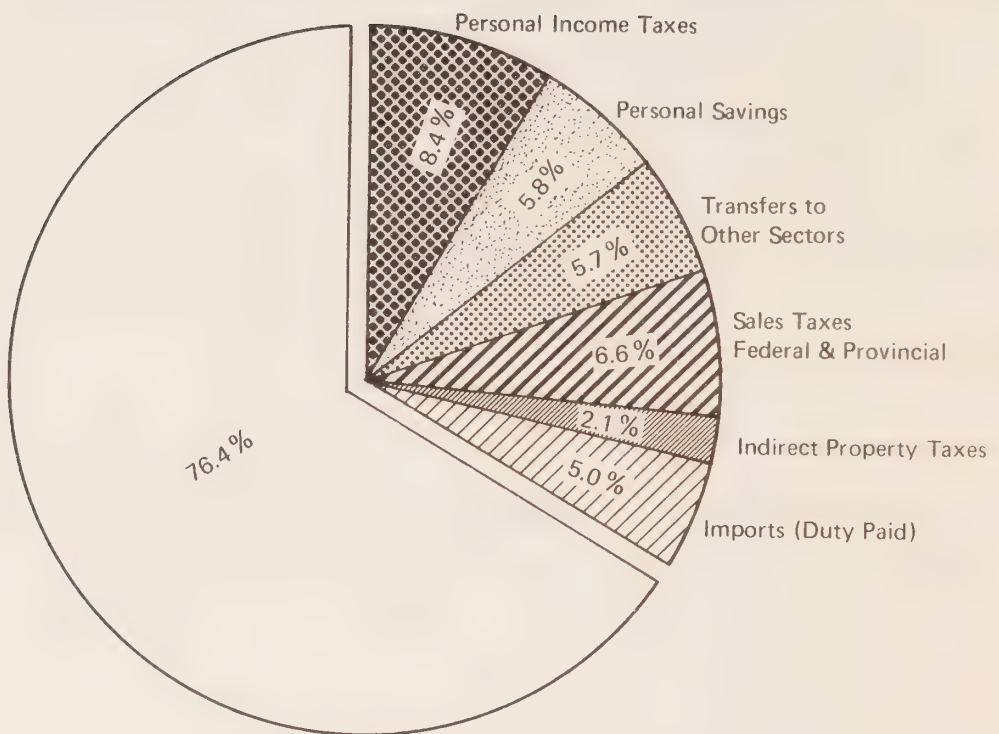
Chart 4.5.1 shows the breakdown of the initial \$1.0 million. Of this \$1.0, 764 thousand is spent on goods and services produced in the business sector. The remaining 236 thousand consists of taxes, savings, imports, and transfers.

The \$1.0 million of household income has the following impacts:

1.721 million household income (including the initial 1.0 million)
.512 million government revenues net of subsidies paid
103 man-years of employment
.959 million gross domestic product at factor cost
\$1.171 million gross domestic product at market prices
\$0.187 million imports
1.766 million gross production in the business sector.

CHART 4.5.1

% DISTRIBUTION OF HOUSEHOLD INCOME



Output Model Solutions #3 and #4 are impact analyses of a \$1.0 million expenditure on residential construction on the open and closed models respectively. These solutions show clearly the differences between the open and closed models. The impacts may be summarized as follows:

Impact on	Open	Closed
	<u>Model</u>	<u>Model</u>
	millions of dollars	
- GDP at factor cost	.80	1.43
- GDP at market prices	.89	1.67
- Labour income	.53	.86
- Imports	.11	.23
- Government revenue net of subsidies	.13	.47
- Gross production in the business sector	1.79	2.96

FOOTNOTES

Section 4

- [1] See Leontief [1951]
- [2] Commodity-by-industry accounting and related input-output models may be traced to Richard Stone (Stone [1961]). It was further developed in Canada by T. Gigantes, K. Levitt and T. Matuszewski and adopted by the United Nations as the recommended System of National Accounts (U.N. [1968]). Commodity-by-industry accounting has been implemented in Canada by the Quebec Bureau of Statistics (B.S.Q. [1970]), Statistics Canada (DBS [1969]) and the Atlantic Provinces (Levitt [1974]).
- [3] For a discussion of these possibilities see Gigantes [1970]. In these terms, the output determination models adopted by Statistics Canada have the mathematical structure of industry technology models with fixed market shares.
- [4] Other examples would be the CANDIDE model, the Wharton long term and industry forecasting model, Maryland model, and certain Battelle models.

5. The Price Models

5.1 Introduction

The price models, often associated with input/output models, are in effect the 'dual' of the output models. Instead of analyzing the propagation of demand through the economic system, the price model serves to analyze the propagation of factor prices throughout the system. This is accomplished under the following behavioural assumptions:

- 1) An industry, faced with a change in the costs of its inputs, will adjust its output prices in such a way as to maintain its PROFIT margins. In other words, increases in costs are passed on to the purchasers of goods. This assumption gives the model 'cost-push' price setting behaviour.
- 2) Each industry will change the prices of all the commodities it produces in the same proportion when confronted with a change in cost.
- 3) There is no price substitution. Neither industries nor consumers will substitute one product for another, should the relative prices of products change.

The price models developed at Statistics Canada utilize the commodity by industry accounting framework of the Canadian input/output tables. The methodology used is an extension of the traditional cost push models.

Two variants of the price model are available: the first variant maintains profit margins in real terms (constant dollars) while the second maintains them in current dollars.¹

As is the case with the output models, the price models are fully operational in the sense that a computer system has been developed to solve the models and prepare reports of the results. The model is solved by an iterative method which is analogous to the solution methodology of the output models.

5.2 Algebraic Expression

The price model makes use of the same accounting identities (equation 3.1 and 3.2) and the same structural parameters - market share coefficients, D , import share coefficients, μ , and input coefficients, B and H - as the output model. The structural parameters are defined in equations 3.3, 3.4, 3.5 and 3.8.

All of the price variables in the system are index numbers. The base of the index numbers is before a hypothesized change

in the exogenous prices; accordingly changes in the exogenous variables are registered as changes from 1.0 and the impact is registered on the endogenous variables as changes from 1.0.

The following price variables may then be defined:

- P_g is a j order vector of industry selling price indexes.
- P_{qd} is a k order vector of domestically - produced - commodity price indexes.
- P_m is a k order vector of import price indexes.
- P_y is a ℓ by j matrix of primary input prices.

The model is expressed as follows:

$$p'_g = p'_{qd} (I - \hat{u}) B + p'_m \hat{u} B + \sum_{i=1}^j p'_{yi} H_i \quad 5.1$$

where p_{yi} is the i th column of the matrix p_y and H_i is an ℓ by j matrix, which is formed by setting the i th column of H_i equal to the i th column in H and all other elements equal to zero.

This is the cost equation. It states that an industry selling price index is a linear combination of input prices - intermediate commodities both domestically produced and imported and primary inputs. The weights are the appropriate input coefficients. It is to be noted that, when all of the

prices on the right hand side take the value of 1.0, the elements in p_g take the value of 1.0 also.

$$\text{i.e. } i'(I-\hat{\mu})B + i'\hat{\mu}B + i'H = i'$$

$$p_{qd}' = p_g'^D$$

5.2

This equation serves to transform industry selling price indexes into domestically produced commodity price indexes, under the assumption that a commodity price index is a linear combination of industry selling price indexes, the weights being the market share coefficients.

The set of $j+k$ equations represented by 5.1 and 5.2 may be used to determine p_g and p_{qd} in terms of p_m and p_y .

The solution for p_g may be written as

$$p_g' = (p_m' \hat{\mu} B + \sum_{i=1}^j p_{yi} H_i) (I-D(I-\hat{\mu})B)^{-1} \quad 5.3$$

p_{qd} may then be obtained from equation 5.2.

Variant 2 of the model which maintains profit margins in current dollars may be formed by modifying equation 5.2, to read:

$$p_g' = p_{qd}'(I-\hat{\mu})B + p_m' \hat{\mu}B + \sum_i \bar{p}_{yi} \bar{H}_i + \Pi \quad 5.4$$

where \bar{p}_Y and $\bar{\Pi}$ are obtained by dropping the 'profit' row from p_Y and H , and Π is a j order vector of current dollar profit margins.

i.e. $\Pi' = p_{\pi}' \hat{H}_{\pi}$ where p_{π} is a vector of 'profit' prices' and H_{π} is the profit row of the H matrix.

$$\Pi = p_g \hat{H}_{\pi} \quad 5.5$$

This equation states that profit margins are maintained in current dollars, or in other words that the ratio of profits to industry selling price indexes in each industry is equal to the initial value of the profit coefficient.

$$\text{e.g. } p_{\pi}' \hat{H}_{\pi} \hat{p}_g^{-1} = H_{\pi}'$$

Equations 5.2, 5.4 and 5.5 may then be solved for p_g , p_{qd} and Π .

Given calculated values for p_{qd} and exogenous values for p_m a variety of final demand deflators may be calculated, for example:

$$p_f' = p_{qd}' (I - \hat{\mu}) F + p_m' \hat{\mu} F$$

$$p_x = p_{qd}' r$$

where r is a vector of export weights.

5.3 The Operational Models

5.3.1 The Computer System

From an operational point of view, the computer system supporting the price model has a number of characteristics in common with that of the input/output models. Both are solved by means of iterative procedures, not requiring the calculation of an inverse; parameter arrays are stored and manipulated in compact form; the systems facilitate the changing of structural parameters, the preparation of exogenous variables and the generation of reports.

The price model system has the added feature that allows the overriding or exogenizing of selected endogenous variables. This feature is of importance because it facilitates the use of the model to simulate the impact of a change in the selling price index of an industry or group of industries and the impact of a change in a commodity price index. In short, the system allows the analyst to reduce the number of endogenous variables (and correspondingly, the number of equations) and replace them by exogenous variables.

The computer system also enables the user to, in effect, mix the profit behaviour in variants 1) and 2). The user may prespecify which industries maintain profit margins in current dollars and which maintain them in constant dollars.

5.3.2 Model Solution

The models are solved by means of the iterative procedures outlined in charts 5.1 and 5.2.

Block 1 initializes industry selling prices ($p_g=1$) in the first iteration. It also sets the values of any p_g or p_{qd} which are predetermined to a value at \bar{p}_g or \bar{p}_{qd} .

Block 2 calculates p_{qd} according to equation 5.2.

Block 3 is used to override selected elements of p_{qd} with values prespecified by the user. In this way selected commodity prices may be exogenized.

Block 4 is specific to the second variant of the price model. It calculates current dollar profit margins at each iteration according to equation 5.5.

Block 5 calculates industry selling price indexes p_g according to either equations 5.1 or 5.4. In the first iteration p_g takes a starting value of one. If the second variant is being used, Π takes a starting value equal to H_π .

Block 6 is analogous to block 3. It allows the user to prespecify selected elements in p_g by replacing values in p_g by corresponding values in \bar{p}_g .

Block 7 tests for convergence. The calculations iterate over blocks (2), (3), (5), (6) (and (4) in the case of variant 2, until a solution is reached. For a more detailed discussion of convergence criteria, see the discussion describing convergence in the output models.

Block 8 is required only if the option to override values in p_{qd} is exercised. It is necessary in this case because industries that produce the commodities whose prices have been predetermined may no longer have cost-push price setting behaviour for all the commodities they produce. Accordingly, their industry selling price index is a weighted combination of the predetermined p_{qd} 's and of the p_g that reflect costs for commodities whose prices are not predetermined. The weights reflect the product-mix observed in the base year. The following equation represents this calculation:

$$\bar{p}_g = \hat{p}_g (C_B i) + C_A p_{qd}$$

where C is the product-mix matrix obtained by dividing each element in V by the corresponding row totals.

$$\text{i.e. } C = g^{-1} V$$

i is a unit vector of length K .

C_A and C_B , such that $C_A + C_B = C$, are formed by putting the columns of C which correspond to commodities whose price has been predetermined into corresponding columns of C_A and the rest of the columns of C into corresponding columns of C_B . The rest of the elements in C_A and C_B are equal to zero.

Block 9 calculates various final demand price indexes according to equations 5.6 and 5.7.

5.4 Experiments with the Price Model

The following four experiments analyse changes in import prices and in wage and salary rates. In all these experiments, the profit margins of industries are calculated in constant dollars.

The results are produced at a level of aggregation for 100 commodities and 42 industries. Final demand price deflators are calculated for eight groups of final demand. The computer generated results are presented in Appendixes 5.1, 5.2, 5.3 and 5.4.

In the first experiment we increase the import price of crude petroleum by 100%. Crude petroleum is the most important input of petroleum refineries (71%) and its import proportion being equal to .45, it follows that the industry selling

price for petroleum refineries increases approximately by 30%. The other industries which are mostly affected by this increase are enumerated in the table following. On the consumer side, 'fuels and petroleum' and 'other petroleum and coal products' prices are increasing by 30% and 20% respectively.

Final demand deflators

- Consumer expenditure price index:	1.0074
- Machinery and equipment price index:	1.0018
- Construction price index:	1.0052
- Inventories price index:	1.0147
- Govt. current expend, price index:	1.0051
- Exports price index:	1.0054
- Re-exports price index:	1.0023
- Imports price index:	1.0357
- Gross domestic product price index at market price:	1.0100
- Total final expenditure price index:	1.0050

In the second experiment the rate of wages and salaries is increased by 10% for all industries. Labour intensive industries react obviously more to this increase than capital intensive industries. We should mention in particular that

'printing and publishing', 'wood industries' and 'construction' are strongly affected by this increase while 'petroleum and coal products' and 'agriculture' show a much smaller effect.

Final demand deflators

-	Consumer expenditure price index:	1.0324
-	Machinery and equipment price index:	1.0287
-	Construction price index:	1.0484
-	Inventories price index:	1.0315
-	Government current exp. price index:	1.0172
-	Exports price index:	1.0349
-	Re-exports price index:	1.0466
-	Imports price index:	1.0000
-	Gross domestic product price index	
	at market price:	1.0274
-	Total final expenditure price index:	1.0319

The third experiment concerns an increase of 5% in the import prices for all commodities. The industries which are mostly affected by these increases are those for which the main input is imported in a large proportion. 'Motor vehicle' industry and 'petroleum and coal products' gets the greatest

impact while the increase in 'agriculture' and in the 'paper' industries is negligible.

Final demand deflators

-	Consumer expenditure price index:	1.0072
-	Machinery and equipment price index:	1.0218
-	Construction price index:	1.0064
-	Inventories price index:	1.0144
-	Government current expend. index:	1.0034
-	Exports price index:	1.0064
-	Re-exports price index:	1.0096
-	Imports price index:	1.0500
-	Gross domestic product price index at market price:	1.0137
-	Total final expenditure price index:	1.0077

In the fourth experiment we increase the wage and salary rate for manufacturing industries only. For the same reasons as in the second experiment, the industry selling prices are affected more or less, depending upon whether the industry is labour intensive or capital intensive. Among the non-manufacturing industries, the biggest impact is on "construction".

Final demand deflators

-	Consumer expenditure price index:	1.0123
-	Machinery and equipment price index:	1.0222
-	Construction price index:	1.0150
-	Inventories price index:	1.0214
-	Government current expenditure price index:	1.0045
-	Exports price index:	1.0206
-	Re-exports price index:	1.0401
-	Imports price index:	1.0000
-	Gross domestic product price index at market price:	1.0120
-	Total final expenditure price index:	1.0139

Chart 5.1: Solution of the Price Model - Variant I

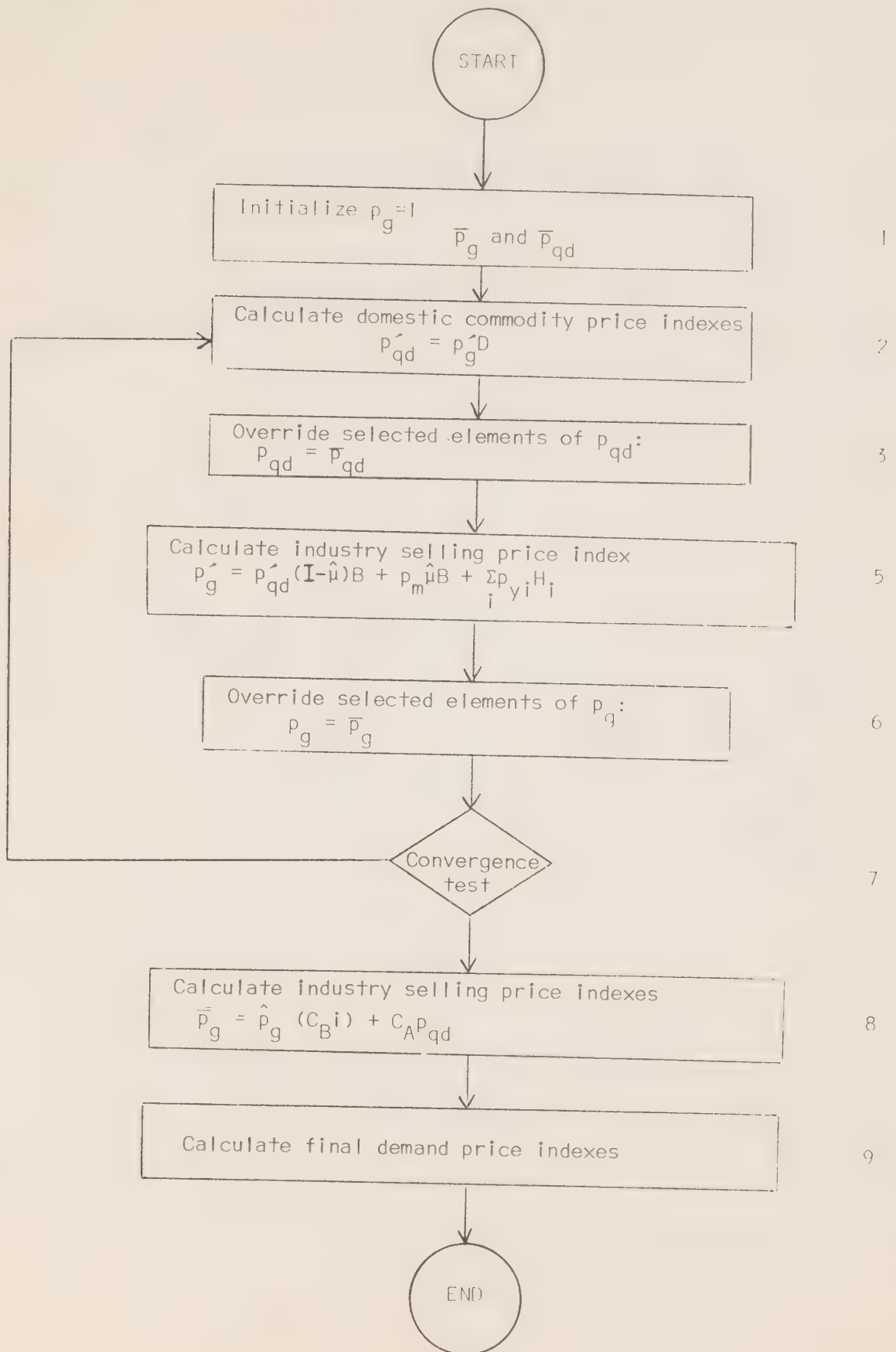
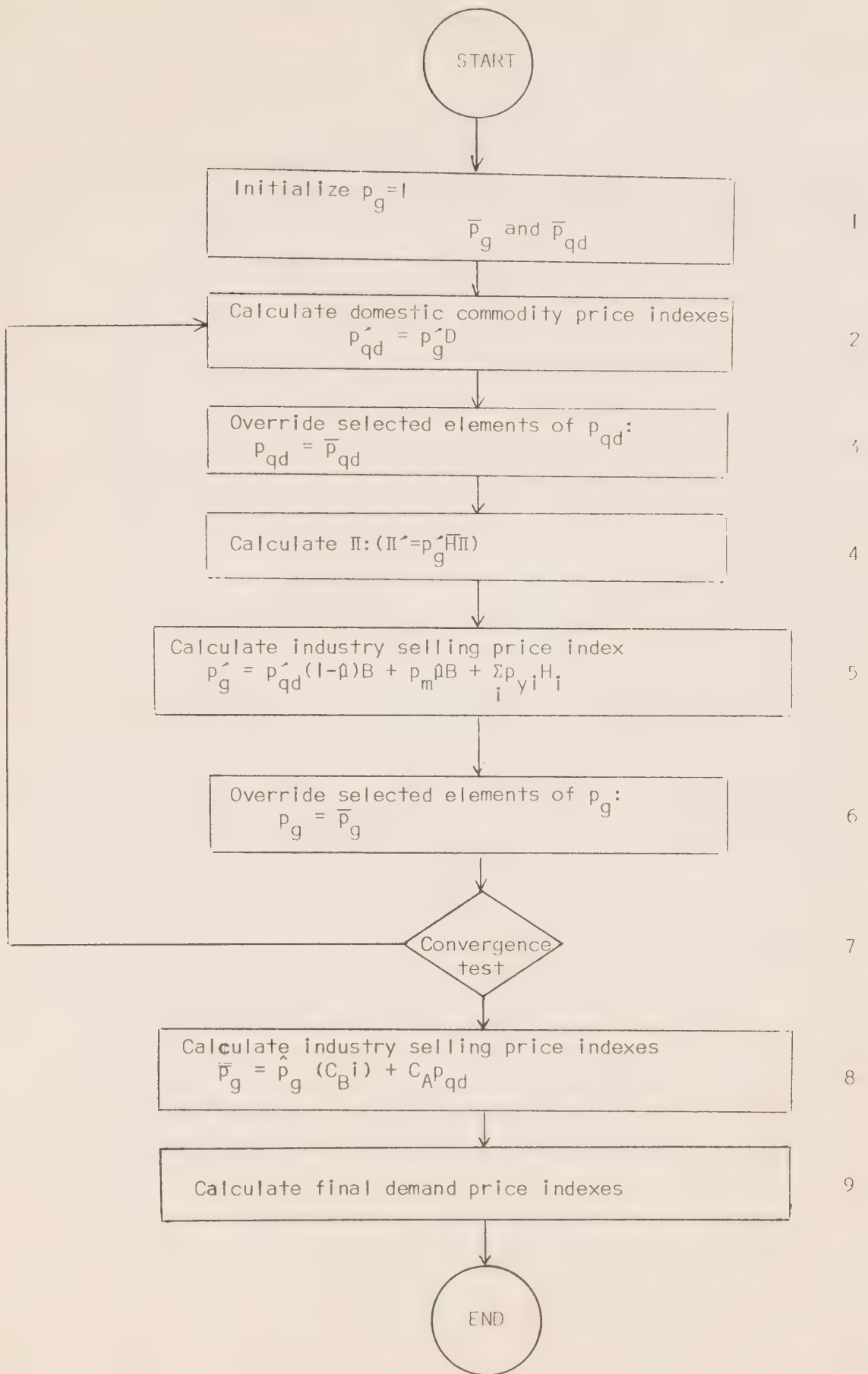


Chart 5.1: Solution of the Price Model - Variant 2



FOOTNOTES

Section 5

- [1] It should be noted that any of the primary inputs can be maintained in constant dollars or in current dollars.

List of References

- Bureau de la Statistique du Quebec. "Le systeme de comptabilite economique du Quebec, quelques resultats". Statistiques, Quebec, 1969, vol. VIII, No. 1.
- Bureau de la Statistique du Quebec et Laboratoire d'econometrie. "Le systeme de comptabilite economique du Quebec, vol. III: Les utilisations", Quebec, 1970.
- Bureau de la Statistique du Quebec et Laboratoire d'econometrie, Universite Laval. Le Systeme de Comptabilite Economique, Volume IV, Analyses Intersectorielles de l'Economie du Quebec, Bureau de la Statistique du Quebec, 1974.
- Dominion Bureau of Statistics, National Accounts Income and Expenditure, 1926-56, catalogue no. 13-502, Ottawa, 1962.
- Dominion Bureau of Statistics. "The input-output structure of the Canadian economy 1961". Ottawa, 1969, vol 1., catalogue no. 15-501 and catalogue no. 15-502.
- Gigantes, T. and Hoffman, R., "A Price-output nucleus for simulation models". In: A. Brody and A.P. Carter (eds.), Input-Output Techniques, North-Holland Publishing Company, Amsterdam, 1972.
- Gigantes, T., "The representation of technology in input-output systems". In: A.P. Carter and A. Brody (eds.), Contributions to Input-Output Analysis North-Holland Publishing Company, Amsterdam, 1970.
- Gigantes, T., Hoffman, R., Lemelin, A., Matuszewski, T. and Truchon, M., "A New Approach to the Structural Analysis of a National Economy and Corresponding Data Strategies", paper read at the Annual Meeting of the Econometric Society, New York, December 1973.
- Klein, L.R., "On the Interpretation of Professor Leontief's System", Review of Economic Studies XX, 1953.
- Leontief, Wassily W., "The Structure of American Economy, 1919 - 1939: An Empirical Application of Equilibrium Analysis", New York, Oxford University Press, 1951.
- Matuszewski, T. "Partly disaggregated rectangular input-output models and their use for the purpose of a large corporation". In: A. Brody and A.P. Carter (eds.), Input-Output Techniques, North-Holland, Amsterdam, 1972.

- Matuszewski, T. "Un systeme rectangulaire d'echanges inter-industries a rendements non proportionnels". Paper presented at the First World Congress of the Econometric Society, Rome, 1965.
- Stone, R., "Input-Output and National Accounts, OECD, Paris 1961.
- Tilanus, C.B., "Input-Output Experiments, The Netherlands, 1948 - 1961", Rotterdam University Press, 1966.
- Theil, H., "Applied Economic Forecasting", Rand, McNally and Company, Chicago, 1966.
- United Nations, Department of Economics and Social Affairs, Statistical Office of the United Nations, "A System of National Accounts", Studies in Methods, Series F No. 2, Rev. 3, New York 1968.

Appendixes to Chapter 2

SEQ	CODE	DESCRIPTION
0	00000	COMMODITY CLASSIFICATION(COM5)
1	00100	CATTLE AND CALVES
2	00200	SHEEP AND LAMBS
3	00300	HOGS
4	00400	POULTRY
5	00500	
6	00600	OTHER LIVE ANIMALS
7	00700	RICE,UNMILLED
8	00800	WHEAT,UNMILLED
9	00900	BARLEY,OATS,RYE,CORN,GRAIN,NES
10	01000	MILK,WHOLE,FLUID,UNPROCESSED
11	01100	EGGS IN THE SHELL
12	01200	HONEY AND BEESWAX
13	01300	NUTS,EDIBLE,NOT SHELLED
14	01400	FRUITS,FRESH, EX.TROPICAL
15	01500	VEGETABLES,FRESH
16	01600	HAY,FORAGE,AND STRAW
17	01700	SEEDS EX. OIL AND SEED GRADES
18	01800	NURSERY STOCK & RELATED MAT.
19	01900	OIL SEEDS,NUTS AND KERNELS
20	02000	HOPS INC. LUPULIN
21	02100	TOBACCO,RAW
22	02200	MINK SKINS,RANCH UNDRESSED
23	02300	WOOL IN GREASE
24	02400	SERV.INCIDENTAL TO AGRICULTURE
25	02500	LOGS AND BOLTS
26	02600	POLES,PIT PROPS FENCE-POSTS ETC
27	02700	PULPWOOD
28	02800	OTHER CRUDE WOOD MATERIALS
29	02900	CUSTOM FORESTRY
30	03000	FISH LANDINGS
31	03100	FUR SKINS UNDRESSED EX RANCH
32	03210	BAUXITE & ALUMINA
33	03220	METAL ORES + CONCENTRATES N.E.S.
34	03300	RADIO-ACTIVE ORES&CONCENTRATES
35	03400	IRON ORES & CONCENTRATES
36	03500	GOLD&PLATINUM ORES&CONCENTRATES
37	03600	GOLD & ALLOYS IN PRIMARY FORM
38	03700	COAL
39	03800	CRUDE MINERAL OILS
40	03900	NATURAL GAS
41	04000	OTH. CRUDE BITUMINOUS SUBSTANCES
42	04100	SULPHUR,CRUDE & REFINED
43	04200	ASBESTOS,UNMFG.,CRUDE& FIBROUS
44	04300	GYP SUM
45	04400	SALT
46	04500	PEATMOSS
47	04600	CLAY&OTHER CRUDE REFRACTORY MAT
48	04700	NATURAL ABRASIVES&INDUST.DIAMOND
49	04800	CRUDE MINERAL NES
50	04900	SAND AND GRAVEL
51	05000	STONE,CRUDE
52	05100	SERVICES INCIDENTAL TO MINING
53	05200	BEEF,VEAL,MUTT&PORK,FRESH&FROZEN
54	05300	HORSE MEAT FRESH,CHILLED,FROZEN

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
55	05400	MEAT,CURED
56	05500	MEAT PREP. COOKED NOT CANNED
57	05600	MEAT PREP. CANNED
58	05700	ANIMAL OILS & FATS & LARD
59	05800	MARGERINE,SHORTENING&LIKE PROD
60	05900	SAUSAGE CASINGS,NATURAL&SYNTH.
61	06000	PRIMARY TANKAGE
62	06100	FEEDS OF ANIMAL ORIGIN NES
63	06200	HIDES AND SKINS,RAW,NES
64	06300	ANIMAL MAT.FOR DRUGS & PERFUME
65	06400	CUSTOM MEAT PACKING
66	06500	POULTRY,FRESH,CHILLED,FROZEN
67	06600	POULTRY,CANNED
68	06700	MILK,WHOLE,FLUID,PROCESSED
69	06800	CREAM,FRESH
70	06900	BUTTER
71	07000	CHEESE,CHEDDAR & MILK
72	07100	MILK EVAPORATED
73	07200	ICE CREAM
74	07300	OTHER DAIRY PRODUCTS
75	07400	PROCESS CHEESE
76	07500	MUSTARD MAYONNAISE
77	07600	FISH,MARINE OIL&OTHER FISH PROD
78	07700	FRUIT,BERRIES,DRIED,DEHYDRATED
79	07800	FRUITS & PREPARATIONS CANNED
80	07900	FRUIT CRYSTALLIZED & GLACE
81	08000	VEGET.FROZEN,DRIED & PRESERVED
82	08100	VEGETABLES&PREPARATIONS CANNED
83	08200	SOUPS CANNED
84	08300	INFANT&JUNIOR FOODS,CANNED
85	08400	PICKLES,RELISHES,OTHER SAUCES
86	08500	VINEGAR
87	08600	OTHER FOOD PREPARATIONS
88	08700	PRIMARY OR CONCENTRATED FEEDS
89	08800	FEED FOR COMMERCIAL LIVESTOCK
90	08900	CHOP&SCRATCH FEEDS,HULLS&GROATS
91	09000	FEEDS OF VEGETABLE ORIGIN NES
92	09100	PET FEEDS
93	09200	WHEAT FLOUR
94	09300	MEAL&FLOUR OF OTHER CEREALS&VEG
95	09400	OTHER GRAIN FEEDS,NES
96	09500	BREAKFAST CEREAL PRODUCTS
97	09600	BISCUITS,ICE CREAM CONES,ETC
98	09700	BREAD & ROLLS
99	09800	OTHER BAKERY PRODUCTS
100	09900	COCOA & CHOCOLATE
101	10000	NUTS,KERNELS & SEEDS PREPARED
102	10100	CHOCOLATE CONFECTIONERY
103	10200	OTHER CONFECTIONERY
104	10300	BEET PULP
105	10400	SUGAR(SUCROSE)REFINED
106	10500	MOLASSES,SUGAR REFINERY PROD.
107	10600	OILSEED,MEAL & CAKE
108	10700	VEG. OILS & FATS, CRUDE
109	10800	CHEM.MODIFIED OILS,FATS&WAXES
110	10900	NITROGEN FUNCTION COMPOUNDS NES

COMMODITY IDENTIFICATION (COM5)

SFQ	CODE	DESCRIPTION
111	11000	MALT, MALT FLOUR & WHEAT STARCH
112	11100	MAPLE SUGAR & SYRUP
113	11200	PREPARED CAKE & SIMILAR MIXES
114	11300	SOUPS, DRIED & SOUP MIXES & BASES
115	11400	COFFEE, ROASTED, GROUND, PREPARED
116	11500	TEA
117	11600	POTATO CHIPS & SIMILAR PRODUCTS
118	11700	MISC. FOOD NES
119	11800	SOFT DRINK CONCENTRATES & SYRUPS
120	11900	CARBONATED BEV., SOFT DRINKS
121	12000	ALCOHOLIC BEVERAGES DISTILLED
122	12100	NEUTRAL SPIRITS & WINE SPIRITS
123	12200	ETHYL ALCOHOL
124	12300	BREWERS' & DISTILLERS' GRAINS
125	12400	ALE BEER, STOUT & PORTER
126	12500	GRAPE WINES
127	12600	TOBACCO PROCESSED, UNMANUFACT.
128	12700	CIGARETTES
129	12800	TOBACCO MFG EX. CIGARETTES
130	12900	FOOTWEAR, RUBBER AND PLASTIC
131	13000	TIRES & TUBES, PASSENGER CARS
132	13100	TIRES & TUBES, TRUCKS & BUSES
133	13200	TIRES & TUBES, AIRPLANES
134	13300	TIRES & TUBES, TRACTOR & IMPLEMENT
135	13400	TIRES, RETREADING
136	13500	RUBBER COMPOUNDS
137	13600	RUBBER BELTS & COATED FABRICS
138	13700	RUBBER SHEETING SHOE STOCK ETC
139	13800	HOSE & TUBING, MAINLY RUBBER
140	13900	RUBBER, PLASTIC FLOORING & TILING
141	14000	TIRES, TUBES PNEUMATIC, NES
142	14100	RUBBER STATIONERY GOODS
143	14200	RUBBER WASTE & SCRAP
144	14300	RUBBER END PRODUCTS NES
145	14400	LEATHER
146	14500	FOOTWEAR EX. RUBBER & PLASTIC
147	14600	LEATHER GLOVES & MITTENS EX SPORT
148	14700	LEATHER BELTING, SHOE STOCK
149	14800	LUGGAGE
150	14900	LEATHER HANDBAGS, WALLETS ETC.
151	15000	YARN, COTTON
152	15100	YARNS MIX & BLENDED & COTTON WASTE
153	15200	FABRICS, BROAD WOVEN OF COTTON
154	15300	TIRE CORD & TIRE FABRICS
155	15400	NETS & NETTING
156	15500	BEDSHEETS, BLANKETS, TOWELS & CLOTHS
157	15600	YARN OF WOOL AND HAIR
158	15700	FABRICS, BROAD WOVEN, WOOL, HAIR & MIX
159	15800	PAPERMAKERS' FELTS
160	15900	WOOLLEN BLANKETS
161	16000	MAN MADE FIBRES
162	16100	POLYAMIDE RESINS (NYLON)
163	16200	YARNS & MIXTURE YARNS, FIBRE & GLASS
164	16300	TIRE YARNS
165	16400	FABRICS, BROAD WOVEN, FIBRES & YARNS
166	16500	FABRICS, BROAD WOVEN, MIX & BLENDS

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
167	16600	SILK
168	16700	RAGS&WASTE,COTTON&TEXTILE MAT.
169	16800	WOOL&FINE ANIMAL HAIR,SPINNING
170	16900	BATTS,WADDING,ETC.TEXTILE FIBRES
171	17000	THREAD,OF COTTON FIBRES
172	17100	THREAD, OF MAN-MADE FIBRES
173	17200	YARN&THREAD,OTHER VEG. FIBRES
174	17300	BALER AND BINDER TWINE
175	17400	OTHER CORDAGE, TWINE & ROPE
176	17500	NARROW FABRICS
177	17600	LACE FABRICS,BOBBINET & NET
178	17700	SHOE & SIMILAR LACES
179	17800	CARPET CUSHION FELT
180	17900	FELT, NES
181	18000	CARPETING&FABRIC RUGS,MATS,ETC.
182	18100	TEXTILE DYEING & FINISHING SER.
183	18200	FABRICS,IMPREG.EX.RUBBER-COATED
184	18300	TILING,FLOORING&WALL COVERING
185	18400	AWNINGS, OF CLOTH & PLASTIC
186	18500	TENTS,HAMMOCKS,SLEEP BAGS&SAILS
187	18600	TARPAULINS & OTHER COVERS
188	18700	TEXTILE CONTAINERS
189	18800	VEGETABLE TEXTILE FIBRES NES
190	18900	FABRICS,FOAM-LAMINATED,QUILTED
191	19000	MISC.TEXTILE FAB.MAT.INC. RAGS
192	19100	SHADES&BLINDS OF COATED FABRICS
193	19200	HOUSEHOLD TEXTILES, NES
194	19300	OTHER TEXTILE END PRODUCTS
195	19400	HOSIERY
196	19500	FABRICS,KNITTED&NETTED,ELASTIC
197	19600	FABRICS, KNITTED, NES
198	19700	UNDERWEAR & SLEEPWEAR, KNITTED
199	19800	OUTERWEAR, KNITTED
200	19900	UNDERWEAR, NES
201	20000	SLEEPWEAR, OF WOVEN FABRIC
202	20100	COATS AND RAINCOATS
203	20200	OUTERWEAR, NES
204	20300	HEADWEAR,GLOVES&MITTS EXCL VAR.
205	20400	APPAREL ACCESSORIES&OTHER MISC.
206	20500	FURS, DRESSED
207	20600	FUR PLATES, MATS AND LININGS
208	20700	FUR GOODS, APPAREL INCL.ART.FUR
209	20800	CUSTOM TAILORING
210	20900	PULPWOOD CHIPS
211	21000	LUMBER&TIM.SOFT,HARD&EXOTIC SPEC
212	21100	RAILWAY TIES
213	21200	SHINGLES,LATH,PALES&SPOOL WOOD
214	21300	WOOD WASTE
215	21400	CUSTOM WOOD WORKING & MILLWORK
216	21500	VENEER AND PLYWOOD
217	21600	MILLWORK (WOODWORK)
218	21700	WOOD FABRICATED MAT.FOR STRUCT.
219	21800	PREFAB.BLDGS.&WOOD STRUCTURES
220	21900	CONTAINERS,CLOSURES&WOOD PALLETS
221	22000	CASKETS,COFFINS&OTHER MORT.GOODS
222	22100	MISC.WOOD FABRICATED MATERIALS

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
223	22200	BARRELS & KEGS OF WOOD
224	22300	WOOD END PRODUCTS,NES
225	22400	HOUSEHOLD FURN.INCL.CAMP&LAWN
226	22500	OFFICE FURN&VISIBLE RECORD EQUIP
227	22600	SPECIAL PURPOSE FURNITURE
228	22700	MISC. FURNITURE AND FIXTURES
229	22800	PORTABLE LAMPS RESIDENTIAL TYPE
230	22910	PULP
231	22920	PULP INTRA TRANSFERS
232	23000	NEWSPRINT PAPER
233	23100	OTHER PAPER FOR PRINTING
234	23200	FINE PAPER
235	23310	TISSUE & SANITARY PAPER
236	23320	TISSUE-SANITARY INTRA TRANSFERS
237	23410	WRAPPING PAPER
238	23420	WRAPPING PAPER INTRA TRANSFERS
239	23510	PAPER BOARD
240	23520	PAPER BOARD INTRA TRANSFERS.
241	23600	BLDG.PAPER,NOT COATED OR IMPREG.
242	23700	TOWELS, NAPKINS & TOILET PAPER
243	23800	CIGARETTE-PAPER BOOKS AND TUBES
244	23900	VANILLIN
245	24000	MISC.IND.PAPER MAT;BY PROD&WASTE
246	24100	BUILDING PAPER,COATED OR IMPREG.
247	24200	TILES&FLAGSTONES,VINYL-ASBESTOS
248	24300	PAPER CARTONS,BAGS,CANS&BOTTLES
249	24400	COATED COVER PAPER&BRISTOL BOARD
250	24500	CONVERTED PAPER,GUM,WAX OR PRINT
251	24600	CONVERTED ALUMINUM FCIL
252	24700	FACIAL TISSUES,&SANITARY NAPKINS
253	24800	PAPER CONTAINERS,NES
254	24900	STATIONERY&PAPER OFFICE SUPPLIES
255	25000	PAPER END PRODUCTS
256	25100	NEWSPAPERS,MAGAZINES&PERIODICALS
257	25200	BOOKS,PAMPHLETS,MAPS&PICTURES
258	25300	BANKNOTES,BONDS,DRAFTS ETC
259	25400	PRINTING NES
260	25500	CUSTOM PRINT&RELATED PRINT.WORK
261	25600	NET REVENUE FROM ADVERTISING
262	25700	SPECIALIZED PUBLISHING SERVICE
263	25800	PRINTING SERVICES
264	25900	FERRO-ALLOYS
265	26010	PIG IRON
266	26020	PIG IRON INTRA TRANSFERS
267	26030	STEEL INGOTS
268	26040	STEEL INGOTS INTRA TRANSFERS
269	26100	STEEL BLOOMS,BILLETS & SLABS
270	26200	STEEL CASTINGS
271	26300	STEEL BARS AND RODS
272	26400	STEEL PLATES, NOT FABRICATED
273	26500	CARBON STEEL FOR PIPES & TUBES
274	26600	CARBON STEEL SHEETS NOT COATED
275	26700	TINPLATE
276	26800	GALVANIZED STEEL SHEET & STRIP
277	26900	BEAMS,WIDE FLANGED
278	27000	RAILS&RLY TRACK MATERIALS,STEEL

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
279	27100	COAL TAR
280	27200	NAT.&SYN.GRAPHITE&CARBON PROD.
281	27300	MECHANICAL STEEL TUBING
282	27400	OIL COUNTRY GOODS
283	27500	STEEL LINE PIPE,TRANS.NAT.GASOIL
284	27600	STEEL PIPES & TUBES NES
285	27700	IRON CASTINGS EXC. PIPE FITTINGS
286	27800	CAST&WROUGHT IRON PIPE&FITTINGS
287	27900	NICKEL IN PRIMARY FORMS
288	28000	COPPER&COPPER ALLOYS,PRIME.FORMS
289	28100	LEAD&LEAD ALLOYS PRIMARY FORMS
290	28200	ZINC&ZINC ALLOYS PRIMARY FORMS
291	28300	ALUMINUM&ALUMINUM ALLOYS PRIME.
292	28400	TIN&TIN ALLOYS PRIMARY FORMS
293	28500	PRECIOUS METAL&ALLOYS PRIME.FORM
294	28600	OTH.NON-FERROUS BASE METALS
295	28700	ALUMINUM FLUORIDES&SODIUM ALUM.
296	28800	INORGANIC BASES&MET.OXIDES,NES
297	28900	SCRAP&WASTE MATERIALS NES
298	29000	ALUMINUM&ALUMINUM ALLOYS, CAST
299	29100	COPPER PROD.CAST,ROLLED&EXTRUDED
300	29200	COPPER ALLOY PROD.CAST,ROLL,EXTR
301	29300	LEAD&LEAD ALLOY PROD.CAST,R&E
302	29400	NICKEL&NICKEL ALLOY FAB.MATERIAL
303	29500	TIN&TIN ALLCY FAB. MATERIALS
304	29600	ZINC DIE CASTING&OTH.ZINC MAT.
305	29700	SOLDERS INC.BLOCK,RODS,WIRE,ETC.
306	29800	PLATES, STEEL, FABRICATED
307	29900	TANKS
308	30000	POWER BOILERS
309	30100	BOILERS, MARINE TYPE
310	30200	PACKAGE BOILER UNITS
311	30300	BASIC STEEL PROD.STRUCT.&MISC.
312	30400	SCAFFOLDING EQUIP., DEMOUNTABLE
313	30500	PREFAB.BLDGS&STRUCT.,MAINLY MET.
314	30600	METAL PRODUCTS NES
315	30700	STEEL SHEET&STRIP COATED OR FAB.
316	30800	CULVERT PIPE, CORRUGATED METAL
317	30900	METAL BASIC PROD.&RANGE BOILERS
318	31000	FURNACE PIPES & FITTINGS ETC.
319	31100	METAL AWNINGS,ASH CANS,PAILS ETC
320	31200	COOKING UTENSILS,IRON.BOARDS,ETC
321	31300	CONTAINERS&BOTTLE CAPS OF METAL
322	31400	WIRE & WIRE ROPE, OF STEEL
323	31500	WIRE FENCING,SCREENING&NETTING
324	31600	CHAIN,EX.AUTO TIRE&POWER TRANS.
325	31700	RODS,WIRE&ELECTRODES,WELDING
326	31800	SPRINGS FOR UPHOLSTERY&MISC.VEH.
327	31900	BOLTS,NUTS,SCREWS,WASHERS ETC.
328	32000	FASTENERS,CLIPS,THUMBTACKS ETC
329	32100	HOUSEHOLD EQUIP.MAINLY WIRE FAB.
330	32200	DISPLAY STANDS
331	32300	BUILDERS' HARDWARE
332	32400	FITTINGS,FURN.CABINETS&CASKETS
333	32500	BASIC HARDWARE,NES
334	32600	CUTTING&FORMING TOOLS ETC.

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
335	32700	BAND&CIRCULAR SAWING MACH&BLADES
336	32800	EDGE TOOLS, HAND
337	32900	MECHANICS' MEASURING TOOLS
338	33000	HAND TOOLS, NES
339	33100	SCISSORS,SHEARS&MISC.IND.CUTLERY
340	33200	SAFETY RAZORS AND BLADES
341	33300	DOMESTIC EQUIPMENT, NES
342	33400	HEATING EQ,HOT WATER&STEAM ETC.
343	33500	HEATING EQ,WARM AIR EX.PIPES&ETC
344	33600	UNIT&WATER TANK HEATERS NON-ELEC
345	33700	FUEL BURNING EQUIPMENT
346	33800	COM.APPLIANCES,COOK&WARMING FOOD
347	33900	CUSTOM METAL WORKING
348	34000	FORGINGS OF CARBON&ALLOY STEEL
349	34100	POWDER METALLURGY PRODUCTS
350	34200	VALVES
351	34300	PIPE FITTINGS,NOT IRON & STEEL
352	34400	GAS METERS AND WATER METERS
353	34500	FIRE FIGHT&TRAFFIC CONTROL EQUIP
354	34600	TAXI&PARK METERS,BLOCKS&LADDERS
355	34700	FIREARMS & MILITARY HARDWARE
356	34800	HAND OPER.KITCHEN&FIREPLACE FIX
357	34900	COLLAPSIBLE TUBES,METAL
358	35000	TRACTORS, FARM & GARDEN TYPE
359	35100	OTHER AGRICULTURAL MACHINERY
360	35200	MECHANICAL POWER TRANS.EQUIP.
361	35300	ENGINES,MARINE&GEN.PURPOSE ETC
362	35400	PUMPS,COMPRESSORS&BLOWERS ETC.
363	35500	CONVEYORS,ESCAL,ELEV&HOIST MACH
364	35600	IND.TRUCKS,TRACTORS,TRAILERS ETC
365	35700	FANS,AIR CIRCULATORS&AIR UNITS
366	35800	PKG.MACH,LUB.EQ&OTH.MISC.MACH.
367	35900	INDUSTRIAL FURNACES,KILNS&OVENS
368	36000	MACH.IND.SPECIFIED&SPECIAL PURP.
369	36100	POWER DRIVEN HAND TOOLS
370	36200	METAL END PRODUCTS, NES
371	36300	REFRIG&AIR CON.EQ,EX.HOUSEHOLD
372	36400	SCALES & BALANCES
373	36500	VENDING MACHINES
374	36600	OFFICE MACHINES AND EQUIPMENT
375	36700	RENTAL DATA PROCESSING EQUIP.
376	36800	AIRCRAFT, ALL TYPES
377	36900	AIRCRAFT ENGINES
378	37000	SPECIALIZED AIRCRAFT EQUIPMENT
379	37100	MODIFICATIONS,CONVERSIONS,SERV.
380	37200	PASSENGER AUTOMOBILES & CHASSIS
381	37300	TRUCKS, CHASSIS, TRACTORS, COM.
382	37400	BUSES AND CHASSIS
383	37500	MILITARY MOTOR VEH, MOTORCYCLES
384	37600	TRAILERS, CABIN OR HOUSE TYPE
385	37700	OTH.TRAILERS&SEMI-TRAILERS,COM.
386	37800	BODIES AND CABS FOR TRUCKS
387	37900	MOTOR VEHICLE ENGINES AND PARTS
388	38000	AUXILIARY ELECTRIC EQUIPMENT
389	38100	MOTOR VEH. ACCESS, PARTS&ASSEMB.
390	38200	AUTOMOTIVE HARDWARE, EX.SPRINGS

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
391	38300	LOCOMOTIVES,CARS&TENDERS,RLY.S&R
392	38400	IND.LCCOMOTIVES&SELF-PROPEL CARS
393	38500	PARTS&ACCESS.FOR RLY.ROLL.STOCK
394	38600	SHIPS&BOATS,MILITARY&COMMERCIAL
395	38700	SUP-ASSEMBLIES,PARTS,ETC.SHIPS
396	38800	SHIP REPAIRS
397	38900	SNOWMOBILES&MISC.NON-MOTOR VEH.
398	39000	PLEASURE & SPORTING CRAFT
399	39100	SMALL ELEC.APPLIANCES,DOMESTIC
400	39200	SPACE HEATER,HEATING STOVES ETC.
401	39300	REFRIG,FREEZERS&COMB. DOMESTIC
402	39400	GAS RANGES&ELEC.STOVES,DOMESTIC
403	39500	SEWING MACH,DISHWASHERS ETC.DOM
404	39600	TV & RADIO RECEIVING SETS&COMB.
405	39700	RECORD PLAYERS,AMPLIFIERS,ETC
406	39800	TEL&TELEG.LINE APPARATUS&EQUIP.
407	39900	RADIO&TV BROADCASTING&TRANS EQ.
408	40000	RADAR EQUIP. & RELATED DEVICES
409	40100	ELEC.TUBES&SEMI-CONDUCTORS ETC.
410	40200	ELECTRONIC EQUIPMENT COMPONENTS
411	40300	INTERIOR SIGNAL,ALARM&CLOCK SYST
412	40400	POLE LINE HARDWARE
413	40500	WELDING MACHINERY & EQUIPMENT
414	40600	MOTORS&GENERATORS,ELEC&TURBINE
415	40700	TRANSFORMERS&CONVERTERS EX.T&T
416	40800	ELEC. EQUIP. INDUSTRIAL, NES
417	40900	BATTERIES
418	41000	WIRE AND CABLE, INSULATED
419	41100	ALUM. WIRE&CABLE,NOT INSULATED
420	41200	ENCLOSED SAFETY SWITCHES ETC.
421	41300	ELEC.LIGHT BULBS&TUBES, ETC
422	41400	ELECTRIC LIGHTING FIXTURES ETC
423	41500	CEMENT
424	41600	LIME
425	41700	PLASTERS&OTH.GYPSUM BASIC PROD.
426	41800	CONCRETE BASIC PRODUCTS
427	41900	SAND LIME BRICKS AND BLOCKS
428	42000	READY-MIX CONCRETE
429	42100	BRICKS AND TILES, CLAY
430	42200	INSULATORS&ELEC.FITTINGS,PORCELN
431	42300	PLUMB.EQ, VITREOUS CHINA,& ETC.
432	42400	REFRACTORIES
433	42500	NATURAL STONE BASIC PROD,STRUCT.
434	42600	STONE,CLAY&CONCRETE END PROD.NES
435	42700	MIN.WOOL&THERMAL INSUL.MAT.NES
436	42800	ASBESTOS BASIC PRODUCTS
437	42900	ASBESTOS-CEMENT PRODUCTS
438	43000	PLATE,SHEET,STRUCT&ORNAMNT GLASS
439	43100	GLASS WOOL&TUBING&OTH.FAB.GLASS
440	43200	GLASS CONTAINERS
441	43300	GLASS TABLEWRE&HOUSEWRE,END&NES
442	43400	ABRASIVE BASIC PRODUCTS
443	43500	NON-METALLIC MIN.BASIC PROD.NES
444	43600	AVIATION GASOLINE
445	43700	MOTOR GASOLINE
446	43800	FUEL OIL

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
447	43900	LUBRICATING OILS AND GREASES
448	44000	BENZENE, TOLUENE AND XYLENE
449	44100	BUTANE, PROPANE & OTH. LIQ. PET. GAS
450	44200	NAPHTHA
451	44300	ASPHALT
452	44400	PETROL PROD. NES INC. FEEDSTOCKS
453	44500	COAL OILS, CREOSOTE, BRIQ & OTH, NES
454	44600	EXPLOSIVES, FUSES AND CAPS
455	44700	AMMUNITION, NON-MILITARY
456	44800	AMMUNITION & ORDNANCE, MILITARY
457	44900	PYROTECHNIC ARTICLES & FIREWORKS
458	45000	FERTILIZERS & FERTILIZER MAT. NES
459	45100	PLASTIC RESINS & MAT., NOT SHAPED
460	45200	FILM & SHEET, CELLULOSIC PLASTIC
461	45300	ETHANOLAMINES
462	45400	ETHYLENE GLYCOL, MONO
463	45500	MEDICINAL & PHARMACEUTICAL PROD.
464	45600	PAINTS & RELATED PRODUCTS
465	45700	VEG. OILS, OTH. THAN CORN OIL, REF.
466	45800	GLYCERIN, REFINED
467	45900	DENTIFRICES, ALL KINDS
468	46000	SOAPS AND DETERGENTS
469	46100	CLEANING & SCOURING POWDERS ETC
470	46200	JAVEL WATER
471	46300	TOILET PREPARATIONS & COSMETICS
472	46400	CHLORINE
473	46500	OXYGEN
474	46600	PHOSPHORUS
475	46700	CHEMICAL ELEMENTS, NES
476	46800	SULPHURIC ACID
477	46900	CARBON DIOXIDE (GAS AND DRY ICE)
478	47000	BORIC ACID
479	47100	INORGANIC ACIDS & OXYGEN COMP. ETC
480	47200	AMMONIA, ANHYDROUS AND AQUA
481	47300	CAUSTIC SODA (SOD. HYDROXIDE) DRY
482	47400	CALCIUM CHLORIDE
483	47500	SODIUM CHLORATE
484	47600	ALUMINUM SULPHATE
485	47700	SODIUM TRIPOLY PHOSPHATE
486	47800	SODIUM PHOSPHATES, OTHER
487	47900	SODIUM CARBONATE (SODA ASH)
488	48000	SODIUM CYANIDE
489	48100	SODIUM SILICATE
490	48200	METALLIC SALTS & PEROXYSALTS, NES
491	48300	INORGANIC CHEMICALS, NES
492	48400	ETHYLENE
493	48500	BUTYLENES
494	48600	BUTADIENE
495	48700	ACETYLENE
496	48800	STYRENE MONOMER
497	48900	CARBON TETRACHLORIDE
498	49000	VINYL CHLORIDE MONOMER
499	49100	TRICHLOROETHYLENE
500	49200	PERCHLOROETHYLENE
501	49300	CHLOROFLUOROHYDROCARBONS, NES
502	49400	HYDROCARBONS & THEIR DERIVATIVES

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
503	49500	METHYL* ALCOHOL
504	49600	PROPYL AND ISOPROPYL ALCOHOLS
505	49700	BUTYL AND ISOBUTYL ALCOHOLS
506	49800	PENTAERYTHRITOL
507	49900	ALCOHOLS AND THEIR DERIVATIVES
508	50000	PHENOL
509	50100	PHENOLS, PHEN. ALCOHOLS & DERIVATIVES
510	50200	ETHERS, ALCOHOL PEROXIDES, ETC
511	50300	FORMALDEHYDE
512	50400	ACETONE
513	50500	METHYL-ETHYL & METHYLISOBUTYL KETONE
514	50600	ALDEHYDE-FUNCTION, KETONE & QUINONE
515	50700	ACETIC ACID
516	50800	ACETIC ANHYDRIDE
517	50900	STEARIC ACID
518	51000	ADIPIC ACID
519	51100	PHTHALATES
520	51200	CITRIC ACIDS
521	51300	ORGANIC ACIDS, AND DERIVATIVES
522	51400	HEXAMETHYLENEDIAMINE
523	51500	SODIUM GLUTAMATE, MONO
524	51600	GUANIDINES
525	51700	ORGANO-INORGANIC COMPOUNDS ETC
526	51800	ORGANIC CHEMICALS, NES
527	51900	TITANIUM DIOXIDE
528	52000	BLACK, ACETYLENE AND CARBON
529	52100	PIGMENTS, LAKES & TONERS, PROPER
530	52200	PIGMENTS, LAKES & TONERS, NES
531	52300	FERTILIZERS & FERTILIZER MAT. NES
532	52400	SYNTHETIC RUBBER
533	52500	ANTIFREEZE COMPOUNDS
534	52600	ADDITIVES FOR MINERAL OILS, NES
535	52700	GLYCERINE, CRUDE
536	52800	RUBBER & PLASTICS COMPOUNDING AGTS
537	52900	CRUDE VEG. MATERIALS & EXTRACTS
538	53000	PHTHALIC ANHYDRIDE
539	53100	CROP AND SEED TREATMENTS
540	53200	HERBICIDES
541	53300	INSECTICIDES & RODENTICIDES, NES
542	53400	ADHESIVES
543	53500	AUTOMOTIVE CHEM. EX. ANTIFREEZE
544	53600	ANTI-ACID ADDITIVES FOR CEMENT
545	53700	BOILER CHEMICALS
546	53800	COMPOUND CATALYSTS
547	53900	METAL WORKING COMPOUNDS
548	54000	PRINTING INK
549	54100	ROTOGRAVURE INK
550	54200	TEXTILE SPECIALTY CHEMICALS
551	54300	INDUSTRIAL CHEM. & PREPARATIONS, NES
552	54400	POLISHES, WAXES, COMPOUNDS & ETC
553	54500	OTH. HOUSEHOLD CHEM. SPECIALTIES.
554	54600	WAXES, ANIMAL & VEGETABLE, OTHER
555	54700	ESSENTIAL OILS, NATURAL OR SYN.
556	54800	TANNING MATERIALS AND DYE STUFFS
557	54900	MIXTURES AND RESIDUES ETC
558	55000	PHOTOGRAPHIC CHEM. PREPARED & PKGD

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
559	55100	EMBALMING CHEM.& PREPARATIONS
560	55200	MATCHES
561	55300	AIRCRAFT&NAUTICAL INSTRUMENTS
562	55400	LAB&SCIENTIFIC APPARATUS ETC
563	55500	MISC.MEASURE&CONTROL INSTRUMENTS
564	55600	MEDICAL&RELATED INSTRUMENTS ETC.
565	55700	IND.MILITARY&CIVIL DEF.SAFETY EQ
566	55800	WATCHES,CLOCKS,CHRONOMETERS ETC.
567	55900	PHOTOGRAPHIC EQ&SUPPL.INCL.FILM
568	56000	JEWELRY,FINDINGS,MET.&GEM STONES
569	56100	PLATED&SILVERWARE,CUTLERY, ETC.
570	56200	BROOMS,BRUSHES,MOPS&OTH.CLEAN.EQ
571	56300	VENETIAN BLINDS ETC.BAMBOO&WOOD
572	56400	PLASTIC FILM&SHEET,NES&OTH.ETC
573	56500	PLASTIC CONTAINERS&BOTTLE CAPS
574	56600	PLASTIC PREFAB.BLDGS&STRUCTURES
575	56700	PLASTIC HOSE,PAILS&END PROD.NES
576	56800	BICYCLES,CHILDREN'S VEH.&PARTS
577	56900	SPORTING,FISHING&HUNTING EQUIP.
578	57000	TOYS AND GAME SETS
579	57100	FUR DRESSING & DYEING SERVICES
580	57200	SIGNS & ADVERTISING DISPLAYS
581	57300	CUSTOM WORK, MISCELLANEOUS
582	57400	ICE
583	57500	ANIMAL HAIR,FEATHERS,QUILLS,ETC.
584	57600	MISC.FAB.MAT.INCL.BRISTLES ETC.
585	57700	OFFICE,DESK&WRITING EQUIP. ETC.
586	57800	INKS&ERADICATORS,MUCILAGE&PASTE
587	57900	BUTTONS,NEEDLES,PINS&MISC.NOTION
588	58000	PHONO RECORDS,ARTIST MAT. ETC.
589	58100	HOUSEHOLD ORNAMENTAL OBJECTS&ART
590	58210	REPAIR CONSTRUCTION
591	58220	RESIDENTIAL CONSTRUCTION
592	58230	NON-RESIDENTIAL CONSTRUCTION
593	58240	ROAD HIGHWAY AIRSTRIP CONST.
594	58250	GAS AND OIL FACILITY CONST.
595	58260	DAMS AND IRRIGATION PROJECTS
596	58270	RAILWAY TELEPHONE TELEGRAPH CON.
597	58280	OTHER ENGINEERING CONSTRUCTION
598	58300	AIR TRANSPORTATION
599	58400	OTHER TRANSPORTATION
600	58500	SERV.INCIDENTAL TO TRANSPORT NES
601	58600	WATER TRANSPORTATION
602	58700	SERV.INCIDENTAL TO WATER TRANS.
603	58800	RAILWAY TRANSPORTATION
604	58900	TRUCK TRANSPORTATION
605	59000	BUS TRANSPORT,INTERURBAN& RURAL
606	59100	URBAN TRANSIT
607	59200	TAXICAB TRANSPORTATION
608	59300	PIPELINE TRANSPORTATION
609	59400	HIGHWAY AND BRIDGE MAINTENANCE
610	59500	STORAGE
611	59600	RADIO & TELEVISION BROADCASTING
612	59700	TELEPHONE & TEL. COMMUNICATION
613	59800	POSTAL SERVICES
614	59900	ELECTRIC POWER

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
615	60000	GAS DISTRIBUTION
616	60110	COKE
617	60120	COKE INTRA TRANSFERS
618	60200	WATER AND OTHER UTILITIES
619	60300	WHOLESALE SERVICE
620	60400	REPAIR&SERVICE BY WHOLESALE EST.
621	60500	RENTAL OF OFFICE EQUIPMENT
622	60600	RETAILING SERVICE
623	60700	REPAIR & SER. BY RETAIL EST.
624	60810	IMPUTED SERVICE, BANKS
625	60820	OTH REAL EST (NON-RENT)&FIN.SERV
626	60900	INSURANCE & W.C.B.
627	61010	IMPUTED RENT OWNER OCPD. DWEL.
628	61020	CASH RESIDENTIAL RENT
629	61030	OTHER RENT
630	61100	GOVT.ROYALTIES ON NAT. RESOURCES
631	61200	EDUCATION AND RELATED SERVICES
632	61300	HOSPITAL SERVICES
633	61400	HEALTH SERVICES
634	61500	MOTION PICTURE ENTERTAINMENT
635	61600	OTHER RECREATIONAL SERVICES
636	61700	SERVICES TO BUSINESS MANAGEMENT
637	61800	ADVERTISING SERVICES
638	61900	LAUNDRY,CLEANING&PRESSING SERV.
639	62000	ACCOMMODATION SERVICES
640	62100	MEALS
641	62200	SERV.MARG.ON ALCOHOLIC BEVERAGES
642	62300	PERSONAL SERVICES
643	62400	PHOTOGRAPHIC SERVICES
644	62500	MISC.REPAIR SER.EX BLDGS&DWELL.
645	62600	SERVICES TO BLDGS. & DWELLINGS
646	62700	OTHER SERV.TO BUSINESSES&PERSONS
647	62800	RENTAL OF AUTOMOBILES & TRUCKS
648	62900	TRADE ASSOCIATION DUES
649	63000	RENTAL AD MACH&EQ.INCL.CONST.MAC
650	63100	SPARE PARTS&MAINT.SUPPL.MACH&EQ.
651	63200	OFFICE SUPPLIES
652	63300	CAFETERIA SUPPLIES
653	63400	TRANSPORTATION MARGINS
654	63500	LABORATORY EQUIP. AND SUPPLIES
655	63600	TRAVELLING AND ENTERTAINMENT
656	63700	
657	63800	ADVERTISING & PROMOTION
658	63900	PURCHASED REPAIR SER.FOR MACH&EQ
659	64000	
660	64100	PULP & PAPER DUMMY COM.
661	64200	IRON & STEEL DUMMY COM.
662	64300	
663	70100	COTTON RAW & SEMI-PROCESSED
664	70200	NATURAL RUBBER & ALLIED GUMS
665	70300	CANE SUGAR , RAW
666	70400	CCCOA BEANS,UNROASTED
667	70500	GREEN COFFEE
668	70600	TROPICAL FRUIT
669	71000	UNALLOCATED EXPORTS & IMPORTS
670	71100	

COMMODITY IDENTIFICATION (COM5)

SEQ	CODE	DESCRIPTION
671	72000	GOVERNMENT GOODS & SERVICES
672	72100	INDIRECT COMMODITY TAXES
673	72200	SUBSIDIES
674	72300	INDIRECT TAXES NON-COMMODITY
675	72400	
676	73000	WAGES AND SALARIES
677	73100	SUPPLEMENTARY LABOUR INCOME
678	73200	NET INCOME UNINCORP BUSINESS
679	73310	HOUSEHOLD INVESTMENT INCOME
680	73320	DEPLETION & MINING WRITE-OFFS
681	73330	CAPITAL COST ALLOWANCE
682	73340	OTHER SURPLUS
683	99999	TOTAL

0	00000	INDUSTRY IDENTIFICATION (IND4)
1	00100	AGRICULTURE
2	00200	FORESTRY
3	00300	FISHING, HUNTING & TRAPPING
4	00400	BASE METAL & OTHER METAL MINES
5	00600	URANIUM MINES
6	00700	IRON MINES
7	00800	GOLD MINES
8	00900	COAL MINES
9	01000	PETROLEUM & GAS WELLS
10	01200	ASBESTOS MINES
11	01300	GYPSUM MINES
12	01400	SALT MINES
13	01500	OTHER NON-METAL MINES
14	01600	QUARRIES & SAND PITS
15	01700	SERVICES INCIDENTAL TO MINING
16	01800	SLAUGHTERING & MEAT PROCESSORS
17	01900	POULTRY PROCESSORS
18	02000	DAIRY FACTORIES
19	02100	PROCESS CHEESE MFGRS.
20	02200	FISH PRODUCTS INDUSTRY
21	02300	FRUIT & VEGETABLE CANNERS
22	02400	FEED MFGRS.
23	02500	FLOUR MILLS
24	02600	BREAKFAST CEREAL MFGRS.
25	02700	BISCUIT MFGRS.
26	02800	BAKERIES
27	02900	CONFECTIONERY MFGRS.
28	03000	SUGAR REFINERIES
29	03100	VEGETABLE OIL MILLS
30	03200	MISCELLANEOUS FOOD INDUSTRIES
31	03300	SOFT DRINK MFGRS.
32	03400	DISTILLERIES
33	03500	BREWERIES
34	03600	WINERIES
35	03700	LEAF TOBACCO PROCESSING
36	03800	TOBACCO PRODUCTS MFGRS.
37	03900	RUBBER FOOTWEAR MFGRS.
38	04000	TIRE & TUBE MFGRS.
39	04100	OTHER RUBBER INDUSTRIES
40	04200	LEATHER TANNERIES
41	04300	SHOE FACTORIES
42	04400	LEATHER GLOVE FACTORIES
43	04500	SMALL LEATHER GOODS MFGRS.
44	04600	COTTON YARN & CLOTH MILLS
45	04700	WOOL YARN MILLS
46	04800	WOOL CLOTH MILLS
47	04900	SYNTHETIC TEXTILE MILLS
48	05000	FIBRE PREPARING MILLS
49	05100	THREAD MILLS
50	05200	CORDAGE & TWINE INDUSTRY
51	05300	NARROW FABRIC MILLS
52	05400	PRESSED & PUNCHED FELT MILLS
53	05500	CARPET, MAT & RUG INDUSTRY
54	05600	TEXTILE DYEING & FINISHING
55	05700	LINOLEUM & COATED FABRICS IND.
56	05800	CANVAS PRODUCTS INDUSTRY

INDUSTRY IDENT (IND4)

57	05900	COTTON & JUTE BAG INDUSTRY
58	C6000	MISCELLANEOUS TEXTILE IND.
59	06100	HOSIERY MILLS
60	06200	OTHER KNITTING MILLS
61	06300	CLOTHING INDUSTRIES
62	06400	SAWMILLS
63	06500	VENEER & PLYWOOD MILLS
64	06600	SASH & DOOR & PLANING MILLS
65	06700	WOODEN BOX FACTORIES
66	C6800	COFFIN & CASKET INDUSTRY
67	06900	MISCELLANEOUS WOOD INDUSTRIES
68	07000	HOUSEHOLD FURNITURE INDUSTRY
69	C7100	OFFICE FURNITURE INDUSTRY
70	07200	OTHER FURNITURE INDUSTRIES
71	07300	ELECTRIC LAMP & SHADE INDUSTRY
72	07401	PULP & PAPER DUMMY IND.
73	07410	WOOD PULP
74	07420	PAPER PRODUCING
75	07430	PAPER CONVERTING
76	07440	PULP & PAPER OTHER ACTIVITIES
77	07500	ASPHALT ROOFING MFGRS.
78	07600	PAPER BOX & BAG MFGRS.
79	07700	OTHER PAPER CONVERTERS
80	07800	PRINTING & PUBLISHING
81	07900	ENGRAVING, STEREOTYPING IND.
82	08001	IRON & STEEL DUMMY IND.
83	08010	COKE OVENS
84	C8020	SINTER PLANT & BLAST FURNACES
85	08030	STEEL MILLS
86	08040	ROLLING MILLS
87	08050	FERRO ALLOY PRODUCERS
88	C8060	IRON & STEEL OTHER ACTIVITIES
89	08100	STEEL PIPE & TUBE MILLS
90	08200	IRON FOUNDRIES
91	08310	ALUMINUM SMELTING AND REFINING
92	08320	OTHER SMELTING AND REFINING
93	08400	ALUMINUM ROLLING & EXTRUDING
94	08500	COPPER & ALLOY ROLLING
95	08600	METAL CASTING & EXTRUDING NES
96	08700	BOILER & PLATE WORKS
97	08800	FABRICATED STRUCT.METAL IND.
98	08900	ORNAMENTAL & ARCH. METAL IND.
99	09000	METAL STAMP. PRESS. & COAT.IND
100	09100	WIRE & WIRE PRODUCTS MFGRS.
101	09200	HARDWARE TOOL & CUTLERY MFGRS.
102	09300	HEATING EQUIPMENT MFGRS.
103	09400	MACHINE SHOPS
104	C9500	MISC. METAL FABRICATING IND.
105	09600	AGRICULTURAL IMPLEMENT IND.
106	09700	MISC. MACHINERY & EQUIP. MFGRS
107	09800	COMM. REFRIG & AIR COND. MFGRS
108	09900	OFFICE & STORE MACHINERY MFGRS
109	10000	AIRCRAFT & PARTS MFGRS.
110	10100	MOTOR VEHICLE MFGRS.
111	10200	TRUCK BODY & TRAILER MFGRS.
112	10300	MOTOR VEH. PTS & ACCESS. MFGRS
113	10400	RAILROAD ROLLING STOCK IND.
114	10500	SHIPBUILDING & REPAIR

INDUSTRY IDENT (IND4)

115	10600	MISC. TRANSP. EQUIP. IND.
116	10700	SMALL ELECTRICAL APPLIANCES
117	10800	MAJOR APPLIANCES ELECT.& NON.
118	10900	RADIO & TELEVISION REC'FVERS
119	11000	COMMUNICATIONS EQUIPMENT MFGRS
120	11100	MFGRS OF ELECT. IND. EQUIP.
121	11200	BATTERY MFGRS.
122	11300	MFGRS OF ELECTRIC WIRE & CABLE
123	11400	MFGRS OF MISC. ELECT. PRODUCTS
124	11500	CEMENT MFGRS
125	11600	LIME MFGRS
126	11700	GYP SUM PRODUCTS MFGRS
127	11800	CONCRETE PRODUCTS MFGRS
128	11900	READY-MIX CONCRETE MFGRS
129	12000	CLAY PRODUCTS MFGRS
130	12100	REFRACTORIES MFGRS
131	12200	STONE PRODUCTS MFGRS
132	12300	MINERAL WOOL MFGRS
133	12400	ASBESTOS PRODUCTS MFGRS
134	12500	GLASS & GLASS PRODUCTS MFGRS
135	12600	ABRASIVES MFGRS
136	12700	OTHER NON-METALLIC PRODS. IND.
137	12800	PETROLEUM REFINERIES
138	12900	OTHER PETROL & COAL PROD. IND.
139	13000	EXPLOSIVES & AMMUNITION MFGRS
140	13100	MFGRS. OF MIXED FERTILIZERS
141	13200	MFGRS. OF PLAST. & SYNTH. RES.
142	13300	MFGRS. OF PHARM. & MEDICINES
143	13400	PAINT & VARNISH MFGRS.
144	13500	MFGRS. OF SOAP & CLEANING COMP
145	13600	MFGRS. OF TOILET PREPARATIONS
146	13700	MFGRS. OF INDUSTRIAL CHEMICALS
147	13800	OTHER CHEMICAL INDUSTRIES
148	13900	SCIENT. & PROF. EQUIP. MFGRS.
149	14000	JEWELRY & SILVERWARE MFGRS.
150	14100	BROOM BRUSH & MOP INDUSTRY
151	14200	VENETIAN BLIND MFGRS.
152	14300	PLASTIC FABRICATORS, NES.
153	14400	SPORTING GOODS & TOY INDUSTRY
154	14500	FUR DRESSING & DYING INDUSTRY
155	14600	SIGNS & DISPLAYS INDUSTRY
156	14700	MISC. MANUFACTURING IND. NES
157	14810	REPAIR CONSTRUCTION
158	14820	RESIDENTIAL CONSTRUCTION
159	14830	NON-RESIDENTIAL CONSTRUCTION
160	14840	ROAD HIGHWAY AIRSTRIP CONST.
161	14850	GAS AND OIL FACILITY CONST.
162	14860	DAMS AND IRRIGATION PROJECTS
163	14870	RAILWAY TELEPHONE TELEGRAPH CON.
164	14880	OTHER ENGINEERING CONSTRUCTION
165	14890	CONSTRUCTION OTHER ACTIVITIES.
166	14900	AIR TRANSPORT
167	15000	SERVICES INCIDENTAL TO TRANSP.
168	15100	WATER TRANSPORT
169	15200	RAILWAY TRANSPORT
170	15300	TRUCK TRANSPORT
171	15400	BUS TRANSP. INTERURBAN & RURAL
172	15500	URBAN TRANSIT SYSTEMS

INDUSTRY IDENT (IND4)

173	15600	TAXICAB OPERATIONS
174	15700	PIPELINE TRANSPORT
175	15800	HIGHWAY & BRIDGE MAINTENANCE
176	15900	STORAGE
177	16000	RADIO & TEL. BROADCASTING
178	16100	COMMUNICATION INDUSTRIES, NES.
179	16200	POST OFFICE
180	16300	ELECTRIC POWER
181	16400	GAS DISTRIBUTION
182	16500	WATER & OTHER UTILITIES
183	16600	WHOLESALE TRADE
184	16700	RETAIL TRADE
185	16810	OWNER OCCUPIED DWELLINGS
186	16820	GOVT. ROYALTIES ON NAT. RESOURCES
187	16830	BANKS AND CREDIT UNIONS
188	16840	INSURANCE
189	16850	OTHER FIN. INS. & REAL ESTATE
190	16900	EDUCATION & RELATED SERVICES
191	17000	HOSPITALS
192	17100	HEALTH SERVICES
193	17300	MOTION PICTURE THEATRES
194	17400	OTHER RECREATIONAL SERVICES
195	17500	PROF. SERVICES TO BUSINESS
196	17600	ADVERTISING SERVICES
197	17700	LAUNDRIES & CLEANERS
198	17800	HOTELS & RESTAURANTS
199	17900	OTHER PERSONAL SERVICES
200	18000	PHOTOGRAPHY
201	18100	MISC. REPAIR & MAINTENANCE
202	18200	MISC. SERVICES TO BUS. & PERS.
203	18300	OPERATING SUPPLIES DUMMY
204	18400	OFFICE SUPPLIES DUMMY
205	18500	CAFETERIA REQU. DUMMY
206	18600	TRANSPORTATION MARGINS DUMMY
207	18700	LABORATORY SUPPLIES DUMMY
208	18800	TRAVEL & ENTERTAINMENT DUMMY
209	18900	
210	19000	ADVERTISING & PROMOTION DUMMY
211	19100	MACHINERY REPAIR SERVICES DUMMY
212		TOTAL

0	00000	FINAL DEMAND IDENT. (FND4)
1	20001	CE FOOD & NON-ALCOHOLIC BEVERAG
2	20002	CE ALCOHOLIC BEVERAGES
3	20003	CE TOBACCO
4	20004	CE MEN'S AND BOY'S CLOTHING
5	20005	CE WOMEN'S&CHILDREN'S CLOTHING
6	20006	CE FOOTWEAR AND SHOE REPAIR
7	20007	CE GROSS IMPUTED RENTS
8	20008	CE GROSS PAID RENTS
9	20009	CE OTHER LODGING
10	20010	CE ELECTRICITY
11	20011	CE GAS
12	20012	CE OTHER FUELS
13	20013	CE FURN.,CARPETS&FLOOR COVERING
14	20014	CE DURABLE HHLD. APPLIANCES
15	20015	CE SEMI-DUR HHLD FURN&SUPPLIES
16	20016	CE NON-DURABLE HHLD. SUPPLIES
17	20017	CE LAUNDRY & DRY CLEANING SERV.
18	20018	CE DOMESTIC SERVICES
19	20019	CE OTHER HOUSEHOLD SERVICES
20	20020	CE MEDICAL CARE
21	20021	CE HOSPITAL CARE
22	20022	CE OTHER MEDICAL CARE
23	20023	CE DRUGS AND SUNDRIES
24	20024	CE NEW & USED AUTOMOBILES
25	20025	CE AUTO REPAIRS & PARTS
26	20026	CE GASOLINE,OIL & GREASE
27	20027	CE OTH AUTO RELATED SERVICES
28	20028	CE PURCHASED TRANSPORTATION
29	20029	CE COMMUNICATIONS
30	20030	CE REC., SPORTS&CAMPING EQP.
31	20031	CE BOOKS,MAGAZINES & STATIONARY
32	20032	CE RECREATIONAL SERVICES
33	20033	CE EDUCATION &CULTURAL SERVICES
34	20034	CE JEWELLRY,WATCHES & REPAIRS
35	20035	CE TOILET ARTICLES,COSMET. ETC.
36	20036	CE PERSONAL CARE
37	20037	CE EXP. IN RESTAUR.&HOTELS ETC.
38	20038	CE PERSONAL BUSINESS
39	20039	CE OPER. EXP. NON-PROFIT ORGN.
40	20040	CE NET EXPENDITURES ABROAD
41	21001	M&E AGRICULTURE AND FISHING
42	21002	M&E FORESTRY
43	21003	M&E MINING QUARRYING & OIL WELLS
44	21004	M&E FOOD AND BEVERAGES
45	21005	M&E TOBACCO AND TOBACCO PRODUCTS
46	21006	M&E RUBBER PRODUCTS
47	21007	M&E LEATHER GOODS
48	21008	M&E TEXTILE PRODUCTS
49	21009	M&E CLOTHING AND KNITTING MILLS
50	21010	M&E WOOD PRODUCTS
51	21011	M&E FURNITURE AND FIXTURES
52	21012	M&E PAPER AND ALLIED INDUSTRIES
53	21013	M&E PRINTING,PUBLISHING & ALLIED
54	21014	M&E PRIMARY METALS
55	21015	M&E METAL FABRICATING
56	21016	M&E MACHINERY

57	21017	M&E TRANSPORT EQUIPMENT
58	21018	M&E ELECTRICAL PRODUCTS
59	21019	M&E NON-METALLIC MINERAL PRODUCT
60	21020	M&E PETROLEUM AND COAL PRODUCTS
61	21021	M&E CHEMICALS & CHEMICAL PROD.
62	21022	M&E MISCELLANEOUS MANUFACTURING
63	21023	M&E CONSTRUCTION INDUSTRY
64	21024	M&E ELECTRIC POWER
65	21025	M&E GAS DISTRIBUTION
66	21026	M&E RAILWAY TRANSPORT
67	21027	M&E URBAN TRANSIT SYSTEMS
68	21028	M&E WATER TRANSPORT AND SERVICES
69	21029	M&E MOTOR TRANSPORT
70	21030	M&E GRAIN ELEVATORS
71	21031	M&E TELEPHONES
72	21032	M&E BROADCASTING
73	21033	M&E AIR TRANSPORT & OTH. UTIL.
74	21034	M&E TRADE, WHOLESALE AND RETAIL
75	21035	M&E FINANCE INSURANCE & REAL EST
76	21036	M&E COMMERCIAL SERVICES
77	21037	M&E CHURCHES AND UNIVERSITIES
78	21038	M&E USED CARS, EQUIP'T. & SCRAP
79	21500	M&E GOVERNMENT SECTOR
80	22001	CON AGRICULTURE AND FISHING
81	22002	CON FORESTRY
82	22003	CON MINING QUARRYING & OIL WELLS
83	22004	CON FOOD AND BEVERAGES
84	22005	CON TOBACCO AND TOBACCO PRODUCTS
85	22006	CON RUBBER PRODUCTS
86	22007	CON LEATHER GOODS
87	22008	CON TEXTILE PRODUCTS
88	22009	CON CLOTHING AND KNITTING MILLS
89	22010	CON WOOD PRODUCTS
90	22011	CON FURNITURE AND FIXTURES
91	22012	CON PAPER AND ALLIED INDUSTRIES
92	22013	CON PRINTING, PUBLISHING & ALLIED
93	22014	CON PRIMARY METALS
94	22015	CON METAL FABRICATING
95	22016	CON MACHINERY
96	22017	CON TRANSPORT EQUIPMENT
97	22018	CON ELECTRICAL PRODUCTS
98	22019	CON NON-METALLIC MINERAL PRODUCT
99	22020	CON PETROLEUM AND COAL PRODUCTS
100	22021	CON CHEMICALS & CHEMICAL PROD.
101	22022	CON MISCELLANEOUS MANUFACTURING
102	22023	CON CONSTRUCTION INDUSTRY
103	22024	CON ELECTRIC POWER
104	22025	CON GAS DISTRIBUTION
105	22026	CON RAILWAY TRANSPORT
106	22027	CON URBAN TRANSIT SYSTEMS
107	22028	CON WATER TRANSPORT AND SERVICES
108	22029	CON MOTOR TRANSPORT
109	22030	CON GRAIN ELEVATORS
110	22031	CON TELEPHONES
111	22032	CON BROADCASTING
112	22033	CON AIR TRANSPORT & OTH. UTIL.
113	22034	CON TRADE, WHOLESALE AND RETAIL
114	22035	CON FINANCE INSURANCE + REAL EST

FINAL DEMAND (FND4)

115	22036	CON COMMERCIAL SERVICES
116	22037	CON CHURCHES AND UNIVERSITIES
117	22040	CON HOUSING
118	22045	CON REAL ESTATE COMMISSIONS
119	22500	CON GOVERNMENT SECTOR
120	23010	INV FINISHED GOODS & GOODS I.P.
121	23020	INV RAW MATERIALS & G.P.R.S.
122	24001	GCE HOSPITAL EXP.
123	24002	GCE EDUCATION EXP.
124	24003	GCE DEFENCE EXP.
125	24004	GCE OTHER MUNICIPAL GOVT. EXP.
126	24005	GCE OTHER PROV. GOVT. EXP.
127	24006	GCE OTHER FED. GOVT. EXP.
128	25000	EXPORTS
129	26000	RE-EXPORTS
130	27000	IMPORTS
131	28001	GCE HOSPITAL REV.
132	28002	GCE EDUCATION REV.
133	28003	GCE DEFENCE REV.
134	28004	GCE OTHER MUNICIPAL GOVT. REV.
135	28005	GCE OTHER PROV. GOVT. REV.
136	28006	GCE OTHER FED. GOVT. REV.
137	99999	TOTAL

APPENDIX 2.4

Reconciliation between the National Income and Expenditure Accounts and the Input-Output Table, 1966.

<u>Income</u>	I-E ¹ (mill)	I-O ² (mill)
Labour Income	32,629	32,629
Net Income of Unincorporated Businesses	6,066	6,098
Other Operating Surplus	16,069	16,517
Gross Domestic Product at Factor Cost	54,764	55,244
Indirect Taxes	8,699	8,668
Less Subsidies	-639	-639
Residual error	182	
Gross Domestic Product at Market Prices	62,976	63,273
 <u>Expenditure</u>	 I-E (mill)	 I-O (mill)
Personal Exp. on Goods & Services	36,890	37,075
Gov't Current Exp. on Goods & Services	9,748	9,765
Gross Fixed Capital Formation	15,361	15,361
Value of Physical Change in Inventories	1,225	1,087
Exports of Goods & Services (National Basis)	13,045	
Less: Investment Income received from non-residents	(-486)	
Exports of Goods & Services (Domestic Basis)	12,559	12,516
Less Imports of Goods & Services (National basis)	(-14,259)	
Investment Income paid to non-residents	1,634	
Less Import of Goods & Services (Domestic Basis)	-12,625	-12,531
Residual Error of Estimate	-182	
Gross Domestic Expenditure	62,976	63,273

1. Source: Tables 2, 3 and 8 National Income and Expenditure Accounts, revised.

2. Source: Input-Output Table, revised January 1973.

Appendixes to Chapter 4

APPENDIX 4.1

Reconciliation between Personal Income and Outlay Account and the Household Sector for the Closed Model, 1966

<u>Income</u>	I-E ¹	I-O ²
Wages, salaries & Supplementary Labour Income	32,629	32,627
Net income of unincorporated business incl. income from farm operations	6,066	6,097
Interest, dividends, and misc. investment income from corporations and transfers from businesses	3,611	3,611
Exogenous income from governments and non-residents	<u>3,944</u>	<u>3,944</u>
Total	46,250	46,279

(Table 12 N.I. & E.)

Outlay

Purchases of consumer goods & services	36,890	37,075
Personal income taxes	3,903	3,903
Other transfers to government	2,290	2,290
Other transfers from persons	349	349
Personal savings	<u>2,818</u>	<u>2,662</u>
Total	46,250	46,279

(Table 13 N.I. & E.)

1. Source: Tables 12 & 13 (Income & Outlay - Government), National Income and Expenditure Accounts, revised, 1972.
2. Source: Input-Output Table 1966, revised January 1973, and Table 12 cited above.

APPENDIX 4.2

COMMODITY CLASSIFICATION(COM5)
AGGREGATED TO 96 COMMODITIES
00100 GRAIN

00700 RICE,UNMILLED
00800 WHEAT,UNMILLED
00900 BARLEY,OATS,RYE,CORN,GRAIN,NES

00200 OTHER AGRICULTURE

00100 CATTLE AND CALVES
00200 SHEEP AND LAMBS
00300 HOGS
00400 POULTRY
00500
00600 OTHER LIVE ANIMALS
01000 MILK,WHOLE,FLUID,UNPROCESSED
01100 EGGS IN THE SHELL
01200 HONEY AND BEESWAX
01300 NUTS,EDIBLE,NOT SHELLED
01400 FRUITS,FRESH, EX.TROPICAL
01500 VEGETABLES,FRESH
01600 HAY,FORAGE,AND STRAW
01700 SEEDS EX. OIL AND SEED GRADES
01800 NURSERY STOCK & RELATED MAT.
01900 OIL SEEDS,NUTS AND KERNELS
02000 HOPS INC. LUPULIN
02100 TOBACCO,RAW
02200 MINK SKINS,RANCH UNDRESSED
02300 WOOL IN GREASE
02400 SERV.INCIDENTAL TO AGRICULTURE

00300 FOREST PRODUCTS

02500 LOGS AND BOLTS
02600 POLES,PIT PROPS FENCE-POSTS ETC
02700 PULPWOOD
02800 OTHER CRUDE WOOD MATERIALS
02900 CUSTOM FORESTRY

00400 FISHING & TRAPPING PRODUCTS

03000 FISH LANDINGS
03100 FUR SKINS UNDRESSED EX RANCH

00500 CRUDE PETROLEUM

03800 CRUDE MINERAL OILS

00600 NATURAL GAS

03900 NATURAL GAS

COMMODITY CLASSIFICATION(COM5)

00700 SULPHUR

04100 SULPHUR,CRUDE & REFINED

00800 COAL

03700 COAL

04000 OTH. CRUDE BITUMINOUS SUBSTANCES

00900 IRON ORE

03400 IRON ORES & CONCENTRATES

01000 ASBESTOS

04200 ASBESTOS,UNMFG.,CRUDE& FIBROUS

01100 OTHER MINERALS

03210 BAUXITE & ALUMINA

03220 METAL ORES + CONCENTRATES N.E.S.

03300 RADIO-ACTIVE ORES&CONCENTRATES

03500 GOLD&PLATINUM ORES&CONCENTRATES

03600 GOLD & ALLOYS IN PRIMARY FORM

04300 GYPSUM

04400 SALT

04500 PEATMOSS

04600 CLAY&OTHER CRUDE REFRACTORY MAT

04700 NATURAL ABRASIVES&INDUST.DIAMOND

04800 CRUDE MINERAL NES

04900 SAND AND GRAVEL

05000 STONE,CRUDE

05100 SERVICES INCIDENTAL TO MINING

01200 MEAT PRODUCTS

05200 BEEF,VEAL,MUTT&PORK,FRESH&FROZEN

05300 HORSE MEAT FRESH,CHILLED,FROZEN

05400 MEAT,CURED

05500 MEAT PREP. COOKED NOT CANNED

05600 MEAT PREP. CANNED

05700 ANIMAL OILS & FATS & LARD

05800 MARGERINE,SHORTENING&LIKE PROD

05900 SAUSAGE CASINGS,NATURAL&SYNTH.

06000 PRIMARY TANKAGE

06100 FEEDS OF ANIMAL ORIGIN NES

06200 HIDES AND SKINS,RAW,NES

06300 ANIMAL MAT.FOR DRUGS & PERFUME

06400 CUSTOM MEAT PACKING

06500 POULTRY,FRESH,CHILLED,FROZEN

06600 POULTRY,CANNED

COMMODITY CLASSIFICATION (COM5)

01300 DAIRY PRODUCTS

06700 MILK, WHOLE, FLUID, PROCESSED
06800 CREAM, FRESH
06900 BUTTER
07000 CHEESE, CHEDDAR & MILK
07100 MILK EVAPORATED
07200 ICE CREAM
07300 OTHER DAIRY PRODUCTS
07400 PROCESS CHEESE
07500 MUSTARD MAYONNAISE

01400 FISH PRODUCTS

07600 FISH, MARINE OIL & OTHER FISH PROD

01500 FEED

08700 PRIMARY OR CONCENTRATED FEEDS
08800 FEED FOR COMMERCIAL LIVESTOCK
08900 CHOP & SCRATCH FEEDS, HULLS & GROATS
09000 FEEDS OF VEGETABLE ORIGIN NES
09100 PET FEEDS

01600 FLOUR & WHEAT

09200 WHEAT FLOUR

01700 OTHER GRAIN MILL PRODUCTS

09300 MEAL & FLOUR OF OTHER CEREALS & VEG
09400 OTHER GRAIN FEEDS, NES
09500 BREAKFAST CEREAL PRODUCTS
12300 BREWERS' & DISTILLERS' GRAINS

01800 BAKERY PRODUCTS

09600 BISCUITS, ICE CREAM CONES, ETC
09700 BREAD & ROLLS
09800 OTHER BAKERY PRODUCTS

01900 SOFT DRINKS

11900 CARBONATED BEV., SOFT DRINKS

COMMODITY CLASSIFICATION(COM5)

02000 OTHER FOOD PRODUCTS

07700 FRUIT, BERRIES, DRIED, DEHYDRATED
07800 FRUITS & PREPARATIONS CANNED
07900 FRUIT CRYSTALLIZED & GLACE
08000 VEGET. FROZEN, DRIED & PRESERVED
08100 VEGETABLES & PREPARATIONS CANNED
08200 SOUPS CANNED
08300 INFANT & JUNIOR FOODS, CANNED
08400 PICKLES, RELISHES, OTHER SAUCES
08500 VINEGAR
08600 OTHER FOOD PREPARATIONS
09900 COCOA & CHOCOLATE
10000 NUTS, KERNELS & SEEDS PREPARED
10100 CHOCOLATE CONFECTIONERY
10200 OTHER CONFECTIONERY
10300 BEET PULP
10400 SUGAR (SUCROSE) REFINED
10500 MOLASSES, SUGAR REFINERY PROD.
10600 OIL SEED, MEAL & CAKE
10700 VEG. OILS & FATS, CRUDE
10800 CHEM. MODIFIED OILS, FATS & WAXES
11000 MALT, MALT FLOUR & WHEAT STARCH
11100 MAPLE SUGAR & SYRUP
11200 PREPARED CAKE & SIMILAR MIXES
11300 SOUPS, DRIED & SOUP MIXES & BASES
11400 COFFEE, ROASTED, GROUND, PREPARED
11500 TEA
11600 POTATO CHIPS & SIMILAR PRODUCTS
11700 MISC. FOOD NES
11800 SOFT DRINK CONCENTRATES & SYRUPS

02100 ALCOHOLIC BEVERAGES

12000 ALCOHOLIC BEVERAGES DISTILLED
12400 ALE BEER, STOUT & PORTER
12500 GRAPE WINES

02200 TOBACCO

12600 TOBACCO PROCESSED, UNMANUFACT.
12700 CIGARETTES
12800 TOBACCO MFG EX. CIGARETTES

02300 TIRES & TUBES

13000 TIRES & TUBES, PASSENGER CARS
13100 TIRES & TUBES, TRUCKS & BUSES
13200 TIRES & TUBES, AIRPLANES
13300 TIRES & TUBES, TRACTOR & IMPLEMENT
13400 TIRES, RETREADING

COMMODITY CLASSIFICATION(COM5)

02400 OTHER RUBBER PRODUCTS

12900 FOOTWEAR,RUBBER AND PLASTIC
13500 RUBBER COMPOUNDS
13600 RUBBER BELTS & COATED FABRICS
13700 RUBBER SHEETING SHOE STOCK ETC
13800 HOSE & TUBING,MAINLY RUBBER
13900 RUBBER,PLASTIC FLOORING&TILING
14000 TIRES,TUBES PNEUMATIC,NES
14100 RUBBER STATIONERY GOODS
14200 RUBBER WASTE & SCRAP
14300 RUBBER END PRODUCTS NES

02500 LEATHER PRODUCTS

14400 LEATHER
14500 FOOTWEAR EX.RUBBER & PLASTIC
14600 LEATHER GLOVES&MITTENS EX SPORT
14700 LEATHER BELTING,SHOE STOCK
14800 LUGGAGE
14900 LEATHER HANDBAGS,WALLETS ETC.

02600 YARNS & MAN-MADE FIBRES

15000 YARN, COTTON
15100 YARNS MIX&BLENDED&COTTON WASTE
15600 YARN OF WOOL AND HAIR
16000 MAN MADE FIBRES
16100 POLYAMIDE RESINS (NYLON)
16200 YARNS&MIXTURE YARNS,FIBRE&GLASS
16300 TIRE YARNS
16800 WOOL&FINE ANIMAL HAIR,SPINNING
17200 YARN&THREAD,OTHER VEG. FIBRES
18800 VEGETABLE TEXTILE FIBRES NES

02700 FABRICS

15200 FABRICS, BROAD WOVEN OF COTTON
15300 TIRE CORD & TIRE FABRICS
15700 FABRICS,BROADWOVEN,WOOL,HAIR&MIX
16400 FABRICS,BROAD WOVEN,FIBRES&YARNS
16500 FABRICS,BROAD WOVEN,MIX&BLENDS
16900 BATTS,WADDING,ETC.TEXTILE FIBRES
17500 NARROW FABRICS
17600 LACE FABRICS,BOBBINET & NET
18200 FABRICS,IMPREG.EX.RUBBER-COATED
18900 FABRICS,FOAM-LAMINATED,QUILTED
19500 FABRICS,KNITTED&NETTED,ELASTIC
19600 FABRICS, KNITTED, NES

COMMODITY CLASSIFICATION(COM5)

02800 TEXTILE PRODUCTS

15400 NETS & NETTING
15500 BEDSHEETS,BLANKETS,TOWELS&CLOTHS
15800 PAPERMAKERS' FELTS
15900 WOOLLEN BLANKETS
16600 SILK
16700 RAGS&WASTE,COTTON&TEXTILE MAT.
17000 THREAD,OF COTTON FIBRES
17100 THREAD, OF MAN-MADE FIBRES
17300 BALER AND BINDER TWINE
17400 OTHER CORDAGE, TWINE & ROPE
17700 SHOE & SIMILAR LACES
17800 CARPET CUSHION FELT
17900 FELT, NES
18000 CARPETING&FABRIC RUGS,MATS,ETC.
18100 TEXTILE DYEING & FINISHING SER.
18300 TILING,FLOORING&WALL COVERING
18400 AWNINGS, OF CLOTH & PLASTIC
18500 TENTS,HAMMOCKS,SLEEP BAGS&SAILS
18600 TARPULINS & OTHER COVERS
18700 TEXTILE CONTAINERS
19000 MISC.TEXTILE FAB.MAT.INC. RAGS
19100 SHADES&BLINDS OF COATED FABRICS
19200 HOUSEHOLD TEXTILES, NES
19300 OTHER TEXTILE END PRODUCTS

02900 CLOTHING

19400 HOSIERY
19700 UNDERWEAR & SLEEPWEAR, KNITTED
19800 OUTERWEAR, KNITTED
19900 UNDERWEAR, NES
20000 SLEEPWEAR, OF WOVEN FABRIC
20100 COATS AND RAINCOATS
20200 OUTERWEAR, NES
20300 HEADWEAR,GLOVES&MITTS EXCL VAR.
20400 APPAREL ACCESSORIES&OTHER MISC.
20500 FURS, DRESSED
20600 FUR PLATES, MATS AND LININGS
20700 FUR GOODS, APPAREL INCL.ART.FUR
20800 CUSTOM TAILORING

03000 LUMBER & PLYWOOD

21000 LUMBER&TIM.SOFT,HARD&EXOTIC SPEC
21100 RAILWAY TIES
21500 VENEER AND PLYWOOD

COMMODITY CLASSIFICATION(COM5)

03100 WOOD PRODUCTS

20900 PULPWOOD CHIPS
21200 SHINGLES,LATH,PALES&SPOOL WOOD
21300 WOOD WASTE
21400 CUSTOM WOOD WORKING & MILLWORK
21600 MILLWORK (WOODWORK)
21700 WOOD FABRICATED MAT.FOR STRUCT.
21800 PREFAB.BLDGS.&WOOD STRUCTURES
21900 CONTAINERS,CLOSURES&WOOD PALLETS
22000 CASKETS,COFFINS&OTHER MORT.GOODS
22100 MISC.WOOD FABRICATED MATERIALS
22200 BARRELS & KEGS OF WOOD
22300 WOOD END PRODUCTS,NES

03200 FURNITURE & FIXTURES

22400 HOUSEHOLD FURN.INCL.CAMP&LAWN
22500 OFFICE FURN&VISIBLE RECORD EQUIP
22600 SPECIAL PURPOSE FURNITURE
22700 MISC. FURNITURE AND FIXTURES
22800 PORTABLE LAMPS RESIDENTIAL TYPE

03300 PULP&PAPER DUMMY & INTRA-TRANSFE

22920 PULP INTRA TRANSFERS
23320 TISSUE-SANITARY INTRA TRANSFERS
23420 WRAPPING PAPER INTRA TRANSFERS
23520 PAPER BOARD INTRA TRANSFERS.
64100 PULP & PAPER DUMMY COM.

03400 PULP

22910 PULP

03500 NEWSPRINT

23000 NEWSPRINT PAPER

03600 OTHER PAPER STOCK

23100 OTHER PAPER FOR PRINTING
23200 FINE PAPER
23310 TISSUE & SANITARY PAPER
23410 WRAPPING PAPER
23510 PAPER BOARD
23600 BLDG.PAPER,NOT COATED OR IMPREG.

COMMODITY CLASSIFICATION(COM5)

03700 INDUSTRIAL PAPER PRODUCTS

23800 CIGARETTE-PAPER BOOKS AND TUBES
23900 VANILLIN
24000 MISC.IND.PAPER MAT;BY PROD&WASTE
24100 BUILDING PAPER,COATED OR IMPREG.
24200 TILES&FLAGSTONES,VINYL-ASBESTOS
24300 PAPER CARTONS,BAGS,CANS&BOTTLES
24400 COATED COVER PAPER&BRISTOL BOARD
24500 CONVERTED PAPER,GUM,WAX OR PRINT
24600 CONVERTED ALUMINUM FOIL
24800 PAPER CONTAINERS,NES
24900 STATIONERY&PAPER OFFICE SUPPLIES

03800 HOUSEHOLD PAPER PRODUCTS

23700 TOWELS, NAPKINS & TOILET PAPER
24700 FACIAL TISSUES,&SANITARY NAPKINS
25000 PAPER END PRODUCTS

03900 PRINTED MATTER

25100 NEWSPAPERS,MAGAZINES&PERIODICALS
25200 BOOKS,PAMPHLETS,MAPS&PICTURES
25300 BANKNOTES,BONDS,DRAFTS ETC
25400 PRINTING NES
25500 CUSTOM PRINT&RELATED PRINT.WORK
25600 NET REVENUE FROM ADVERTISING
25700 SPECIALIZED PUBLISHING SERVICE
25800 PRINTING SERVICES

04010 IRON & STEEL DUMMY & INTRA-TRANS

26020 PIG IRON INTRA TRANSFERS
26040 STEEL INGOTS INTRA TRANSFERS
60120 COKE INTRA TRANSFERS
64200 IRON & STEEL DUMMY COM.

COMMODITY CLASSIFICATION(COM5)

04020 IRON & STEEL PRODUCTS

25900 FERRO-ALLOYS
26010 PIG IRON
26030 STEEL INGOTS
26100 STEEL BLCOMS,BILLET & SLABS
26200 STEEL CASTINGS
26300 STEEL BARS AND RODS
26400 STEEL PLATES, NOT FABRICATED
26500 CARBON STEEL FOR PIPES & TUBES
26600 CARBON STEEL SHEETS NOT COATED
26700 TINPLATE
26800 GALVANIZED STEEL SHEET & STRIP
26900 BEAMS,WIDE FLANGED
27000 RAILS&RLY TRACK MATERIALS,STEEL
27300 MECHANICAL STEEL TUBING
27400 OIL COUNTRY GOODS
27500 STEEL LINE PIPE,TRANS.NAT.GAS OIL
27600 STEEL PIPES & TUBES NES
27700 IRON CASTINGS EXC. PIPE FITTINGS
27800 CAST&WROUGHT IRON PIPE&FITTINGS

04100 ALUMINUM PRODUCTS

28300 ALUMINUM&ALUMINUM ALLOYS PRIME.
29000 ALUMINUM&ALUMINUM ALLOYS, CAST

04200 COPPER & COPPER ALLOY PRODUCTS

28000 COPPER&COPPER ALLOYS,PRIME.FORMS
29100 COPPER PROD.CAST,ROLLED&EXTRUDED
29200 COPPER ALLOY PROD.CAST,ROLL,EXTR

04300 NICKEL PRODUCTS

27900 NICKEL IN PRIMARY FORMS
29400 NICKEL&NICKEL ALLOY FAB.MATERIAL

04400 OTHER NON-FERROUS METAL PRODUCTS

28100 LEAD&LEAD ALLOYS PRIMARY FORMS
28200 ZINC&ZINC ALLOYS PRIMARY FORMS
28400 TIN&TIN ALLOYS PRIMARY FORMS
28500 PRECIOUS METAL&ALLOYS PRIME.FORM
28600 OTH.NON-FERROUS BASE METALS
28900 SCRAP&WASTE MATERIALS NES
29300 LEAD&LEAD ALLOY PROD.CAST,R&E
29500 TIN&TIN ALLOY FAB. MATERIALS
29600 ZINC DIE CASTING&OTH.ZINC MAT.
29700 SOLDERS INC.BLOCK,RODS,WIRE,ETC.

COMMODITY CLASSIFICATION(COM5)

04500 METAL FABRICATED PRODUCTS

29800 PLATES, STEEL, FABRICATED
29900 TANKS
30000 POWER BOILERS
30100 BOILERS, MARINE TYPE
30200 PACKAGE BOILER UNITS
30300 BASIC STEEL PROD.STRUCT.&MISC.
30400 SCAFFOLDING EQUIP., DEMOUNTABLE
30500 PREFAB.BLDGS&STRUCT.,MAINLY MET.
30600 METAL PRODUCTS NES
30700 STEEL SHEET&STRIP COATED OR FAB.
30800 CULVERT PIPE, CORRUGATED METAL
30900 METAL BASIC PROD.&RANGE BOILERS
31000 FURNACE PIPES & FITTINGS ETC.
31100 METAL AWNINGS,ASH CANS,PAILS ETC
31200 COOKING UTENSILS,IRON.BOARDS,ETC
31300 CONTAINERS&BOTTLE CAPS OF METAL
31400 WIRE & WIRE ROPE, OF STEEL
31500 WIRE FENCING,SCREENING&NETTING
31600 CHAIN,EX.AUTO TIRE&POWER TRANS.
31700 RODS,WIRE&ELECTRODES,WELDING
31800 SPRINGS FOR UPHOLSTERY&MISC.VEH.
31900 BOLTS,NUTS,SCREWS,WASHERS ETC.
32000 FASTENERS,CLIPS,THUMB TACKS ETC
32100 HOUSEHOLD EQUIP.MAINLY WIRE FAB.
32200 DISPLAY STANDS
32300 BUILDERS' HARDWARE
32400 FITTINGS,FURN.CABINETS&CASKETS
32500 BASIC HARDWARE,NES
32600 CUTTING&FORMING TOOLS ETC.
32700 BAND&CIRCULAR SAWING MACH&BLADES
32800 EDGE TOOLS, HAND
32900 MECHANICS' MEASURING TOOLS
33000 HAND TOOLS, NES
33100 SCISSORS,SHEARS&MISC.IND.CUTLERY
33200 SAFETY RAZORS AND BLADES
33300 DOMESTIC EQUIPMENT, NES
33400 HEATING EQ,HOT WATER&STEAM ETC.
33500 HEATING EQ,WARM AIR EX.PIPES&ETC
33600 UNIT&WATER TANK HEATERS NON-ELEC
33700 FUEL BURNING EQUIPMENT
33800 COM.APPLIANCES,COOK&WARMING FOOD
33900 CUSTOM METAL WORKING
34000 FORGINGS OF CARBON&ALLOY STEEL
34100 POWDER METALLURGY PRODUCTS
34200 VALVES
34300 PIPE FITTINGS,NOT IRON & STEEL
34400 GAS METERS AND WATER METERS
34500 FIRE FIGHT&TRAFFIC CONTROL EQUIP
34600 TAXI&PARK METERS,BLOCKS&LADDERS
34700 FIREARMS & MILITARY HARDWARE
34800 HAND OPER.KITCHEN&FIREPLACE FIX
34900 COLLAPSIBLE TUBES,METAL

COMMODITY CLASSIFICATION(COM5)

04600 AGRICULTURAL MACHINERY

35000 TRACTORS, FARM & GARDEN TYPE
35100 OTHER AGRICULTURAL MACHINERY

04700 OTHER INDUSTRIAL MACHINERY

35200 MECHANICAL POWER TRANS.EQUIP.
35300 ENGINES,MARINE&GEN.PURPOSE ETC
35400 PUMPS,COMPRESSORS&BLOWERS ETC.
35500 CONVEYORS,ESCAL,ELEV&HOIST MACH
35600 IND.TRUCKS,TRACTORS,TRAILERS ETC
35700 FANS,AIR CIRCULATORS&AIR UNITS
35800 PKG.MACH,LUB.EQ&OTH.MISC.MACH.
35900 INDUSTRIAL FURNACES,KILNS&OVENS
36000 MACH.IND.SPECIFIED&SPECIAL PURP.
36100 POWER DRIVEN HAND TOOLS
36200 METAL END PRODUCTS, NES
36300 REFRIG&AIR CON.EQ,EX.HOUSEHOLD
36400 SCALES & BALANCES
36500 VENDING MACHINES
36600 OFFICE MACHINES AND EQUIPMENT

04800 MOTOR VEHICLES

37200 PASSENGER AUTOMOBILES & CHASSIS
37300 TRUCKS, CHASSIS, TRACTORS, COM.
37400 BUSES AND CHASSIS
37500 MILITARY MOTOR VEH, MOTORCYCLES
37600 TRAILERS, CABIN OR HOUSE TYPE
37700 OTH.TRAILERS&SEMI-TRAILERS,COM.

04900 MOTOR VEHICLE PARTS

37800 BODIES AND CABS FOR TRUCKS
37900 MOTOR VEHICLE ENGINES AND PARTS
38000 AUXILIARY ELECTRIC EQUIPMENT
38100 MOTOR VEH. ACCESS, PARTS&ASSEMB.
38200 AUTOMOTIVE HARDWARE, EX.SPRINGS

COMMODITY CLASSIFICATION(COM5)

05000 OTHER TRANSPORT EQUIPMENT

36800 AIRCRAFT, ALL TYPES
36900 AIRCRAFT ENGINES
37000 SPECIALIZED AIRCRAFT EQUIPMENT
37100 MODIFICATIONS, CONVERSIONS, SERV.
38300 LOCOMOTIVES, CARS & TENDERS, RLY. SER
38400 IND. LOCOMOTIVES & SELF-PROPEL CARS
38500 PARTS & ACCESS. FOR RLY. ROLL. STOCK
38600 SHIPS & BOATS, MILITARY & COMMERCIAL
38700 SUB-ASSEMBLIES, PARTS, ETC. SHIPS
38800 SHIP REPAIRS
38900 SNOWMOBILES & MISC. NON-MOTOR VEH.
39000 PLEASURE & SPORTING CRAFT

05100 APPLIANCES

39100 SMALL ELEC. APPLIANCES, DOMESTIC
39300 REFRIG, FREEZERS & COMB. DOMESTIC
39400 GAS RANGES & ELEC. STOVES, DOMESTIC
39500 SEWING MACH, DISHWASHERS ETC. DOM
39600 TV & RADIO RECEIVING SETS & COMB.
39700 RECORD PLAYERS, AMPLIFIERS, ETC

05200 OTHER ELECTRICAL EQUIPMENT

39200 SPACE HEATER, HEATING STOVES ETC.
39800 TEL & TELEG. LINE APPARATUS & EQUIP.
39900 RADIO & TV BROADCASTING & TRANS EQ.
40000 RADAR EQUIP. & RELATED DEVICES
40100 ELEC. TUBES & SEMI-CONDUCTORS ETC.
40200 ELECTRONIC EQUIPMENT COMPONENTS
40300 INTERIOR SIGNAL, ALARM & CLOCK SYST
40400 POLE LINE HARDWARE
40500 WELDING MACHINERY & EQUIPMENT
40600 MOTORS & GENERATORS, ELEC & TURBINE
40700 TRANSFORMERS & CONVERTERS EX. T & T
40800 ELEC. EQUIP. INDUSTRIAL, NES
40900 BATTERIES
41000 WIRE AND CABLE, INSULATED
41100 ALUM. WIRE & CABLE, NOT INSULATED
41200 ENCLOSED SAFETY SWITCHES ETC.
41300 ELEC. LIGHT BULBS & TUBES, ETC
41400 ELECTRIC LIGHTING FIXTURES ETC

05300 CEMENT & CONCRETE PRODUCTS

41500 CEMENT
41800 CONCRETE BASIC PRODUCTS
41900 SAND LIME BRICKS AND BLOCKS
42000 READY-MIX CONCRETE

COMMODITY CLASSIFICATION(COM5)

05400 OTHER NON-METALLIC MIN. PRODS.

27200 NAT.&SYN.GRAPHITE&CARBON PROD.
41600 LIME
41700 PLASTER&OTH.GYPSUM BASIC PROD.
42100 BRICKS AND TILES, CLAY
42200 INSULATORS&ELEC.FITTINGS,PORCELN
42300 PLUMB.EQ, VITREOUS CHINA,& ETC.
42400 REFRACTORIES
42500 NATURAL STONE BASIC PROD,STRUCT.
42600 STONE,CLAY&CONCRETE END PROD.NES
42700 MIN.WOOL&THERMAL INSUL.MAT.NES
42800 ASBESTOS BASIC PRODUCTS
42900 ASBESTOS-CEMENT PRODUCTS
43000 PLATE,SHEET,STRUCT&ORNAMNT GLASS
43100 GLASS WOOL&TUBING&OTH.FAB.GLASS
43200 GLASS CONTAINERS
43300 GLASS TABLEWRE&HOUSEWRE,END&NES
43400 ABRASIVE BASIC PRODUCTS
43500 NON-METALLIC MIN.BASIC PROD.NES

05500 FUELS & PETROLEUM

43600 AVIATION GASOLINE
43700 MOTOR GASOLINE
43800 FUEL OIL

05600 OTHER PETROLEUM & COAL PROD.

27100 COAL TAR
43900 LUBRICATING OILS AND GREASES
44000 BENZENE, TOLUENE AND XYLENE
44100 BUTANE,PROPANE&OTH.LIQ.PET.GAS
44200 NAPHTHA
44300 ASPHALT
44400 PETROL PROD. NES INC. FEEDSTOCKS
44500 COAL OILS,CREOSOTE,BRIQ&OTH,NES
60110 COKE

05700 INDUSTRIAL CHEMICALS

10900 NITROGEN FUNCTION COMPOUNDS NES
12100 NEUTRAL SPIRITS&WINE SPIRITS
12200 ETHYL ALCOHOL
28700 ALUMINUM FLUORIDES&SODIUM ALUM.
28800 INORGANIC BASES&MET.OXIDES,NES
45100 PLASTIC RESINS&MAT.,NOT SHAPED
45200 FILM&SHEET, CELLULOSIC PLASTIC
45300 ETHANOLAMINES
45400 ETHYLENE GLYCOL, MONO
45800 GLYCERIN, REFINED

COMMODITY CLASSIFICATION(COM5)

46400 CHLORINE
 46500 OXYGEN
 46600 PHOSPHORUS
 46700 CHEMICAL ELEMENTS, NES
 46800 SULPHURIC ACID
 46900 CARBON DIOXIDE (GAS AND DRY ICE)
 47000 BORIC ACID
 47100 INORGANIC ACIDS&OXYGEN COMP.ETC
 47200 AMMONIA, ANHYDROUS AND AQUA
 47300 CAUSTIC SODA (SOD.HYDROXIDE) DRY
 47400 CALCIUM CHLORIDE
 47500 SODIUM CHLORATE
 47600 ALUMINUM SULPHATE
 47700 SODIUM TRIPOLY PHOSPHATE
 47800 SODIUM PHOSPHATES, OTHER
 47900 SODIUM CARBONATE (SODA ASH)
 48000 SODIUM CYANIDE
 48100 SODIUM SILICATE
 48200 METALLIC SALTS&PEROXYSALTS,NES
 48300 INORGANIC CHEMICALS, NES
 48400 ETHYLENE
 48500 BUTYLENES
 48600 BUTADIENE
 48700 ACETYLENE
 48800 STYRENE MONOMER
 48900 CARBON TETRACHLORIDE
 49000 VINYLCHLORIDE MONOMER
 49100 TRICHLOROETHYLENE
 49200 PERCHLOROETHYLENE
 49300 CHLOROFLUOROHYDROCARBONS, NES
 49400 HYDROCARBONS&THEIR DERIVATIVES
 49500 METHYL ALCOHOL
 49600 PROPYL AND ISOPROPYL ALCOHOLS
 49700 BUTYL AND ISOBUTYL ALCOHOLS
 49800 PENTAERYTHRITOL
 49900 ALCOHOLS AND THEIR DERIVATIVES
 50000 PHENOL
 50100 PHENOLS, PHEN. ALCOHOLS&DERIVATIVES
 50200 ETHERS, ALCOHOL PEROXIDES, ETC
 50300 FORMALDEHYDE
 50400 ACETONE
 50500 METHYL-ETHYL&METHYLISOBUTYL KETONE
 50600 ALDEHYDE-FUNCTION, KETONE&QUINONE
 50700 ACETIC ACID
 50800 ACETIC ANHYDRIDE
 50900 STEARIC ACID
 51000 ADIPIC ACID
 51100 PHTHALATES
 51200 CITRIC ACIDS
 51300 ORGANIC ACIDS, AND DERIVATIVES
 51400 HEXAMETHYLENEDIAMINE
 51500 SODIUM GLUTAMATE, MONO

COMMODITY CLASSIFICATION(COM5)

51600 GUANIDINES
51700 ORGANO-INORGANIC COMPOUNDS ETC
51800 ORGANIC CHEMICALS, NES
51900 TITANIUM DIOXIDE
52000 BLACK, ACETYLENE AND CARBON
52100 PIGMENTS, LAKES & TONERS, PROPER
52200 PIGMENTS, LAKES & TONERS, NES
52300 FERTILIZERS&FERTILIZER MAT.NES
52400 SYNTHETIC RUBBER
52700 GLYCERINE, CRUDE
52800 RUBBER&PLASTICS COMPOUNDING AGTS
52900 CRUDE VEG. MATERIALS & EXTRACTS
53000 PHTHALIC ANHYDRIDE

05800 FERTILIZERS

45000 FERTILIZERS&FERTILIZER MAT. NES

05900 PHARMACEUTICALS

45500 MEDICINAL & PHARMACEUTICAL PROD.

06000 OTHER CHEMICAL PRODUCTS

44600 EXPLOSIVES, FUSES AND CAPS
44700 AMMUNITION, NON-MILITARY
44800 AMMUNITION & ORDNANCE, MILITARY
44900 PYROTECHNIC ARTICLES & FIREWORKS
45600 PAINTS & RELATED PRODUCTS
45700 VEG. OILS, OTH. THAN CORN OIL, REF.
45900 DENTIFRICES, ALL KINDS
46000 SOAPS AND DETERGENTS
46100 CLEANING & SCOURING POWDERS ETC
46200 JAVEL WATER
46300 TOILET PREPARATIONS & COSMETICS
52500 ANTIFREEZE COMPOUNDS
52600 ADDITIVES FOR MINERAL OILS, NES
53100 CROP AND SEED TREATMENTS
53200 HERBICIDES
53300 INSECTICIDES&RODENTICIDES, NES
53400 ADHESIVES
53500 AUTOMOTIVE CHEM. EX. ANTIFREEZE
53600 ANTI-ACID ADDITIVES FOR CEMENT
53700 BOILER CHEMICALS
53800 COMPOUND CATALYSTS
53900 METAL WORKING COMPOUNDS
54000 PRINTING INK
54100 ROTOGRAVURE INK
54200 TEXTILE SPECIALTY CHEMICALS
54300 INDUSTRIAL CHEM&PREPARATIONS, NES
54400 POLISHES, WAXES, COMPOUNDS & ETC
54500 OTH. HOUSEHOLD CHEM. SPECIALTIES.
54600 WAXES, ANIMAL & VEGETABLE, OTHER
54700 ESSENTIAL OILS, NATURAL OR SYN.
54800 TANNING MATERIALS AND DYESTUFFS
54900 MIXTURES AND RESIDUES ETC
55000 PHOTOGRAPHIC CHEM. PREPARED&PKG'D
55100 EMBALMING CHEM. & PREPARATIONS
55200 MATCHES

COMMODITY CLASSIFICATION(COM5)

06100 SCIENTIFIC EQUIPMENT

55300 AIRCRAFT&NAUTICAL INSTRUMENTS
55400 LAB&SCIENTIFIC APPARATUS ETC
55500 MISC.MEASURE&CONTROL INSTRUMENTS
55600 MEDICAL&RELATED INSTRUMENTS ETC.
55700 IND.MILITARY&CIVIL DEF.SAFETY EQ
55800 WATCHES,CLOCKS,CHRONOMETERS ETC.
55900 PHOTOGRAPHIC EQ&SUPPL.INCL.FILM

06200 PLASTIC PRODUCTS

56400 PLASTIC FILM&SHEET,NES&OTH.ETC
56500 PLASTIC CONTAINERS&BOTTLE CAPS
56600 PLASTIC PREFAB.BLDGS&STRUCTURES
56700 PLASTIC HOSE,PAILS&END PROD.NES

06300 OTHER MANUFACTURED PRODUCTS

56000 JEWELRY,FINDINGS,MET.&GEM STONES
56100 PLATED&SILVERWARE,CUTLERY, ETC.
56200 BROOMS,BRUSHES,MOPS&OTH.CLEAN.EQ
56300 VENETIAN BLINDS ETC.BAMBOO&WOOD
56800 BICYCLES,CHILDREN'S VEH.&PARTS
56900 SPORTING,FISHING&HUNTING EQUIP.
57000 TOYS AND GAME SETS
57100 FUR DRESSING & DYEING SERVICES
57200 SIGNS & ADVERTISING DISPLAYS
57300 CUSTOM WORK, MISCELLANEOUS
57400 ICE
57500 ANIMAL HAIR,FEATHERS,QUILLS,ETC.
57600 MISC.FAB.MAT.INCL.BRISTLES ETC.
57700 OFFICE,DESK&WRITING EQUIP. ETC.
57800 INKS&ERADICATORS,MUCILAGE&PASTE
57900 BUTTONS,NEEDLES,PINS&MISC.NOTION
58000 PHONO RECORDS,ARTIST MAT. ETC.
58100 HOUSEHOLD ORNAMENTAL OBJECTS&ART

06400 RESIDENTIAL DWELLINGS

58220 RESIDENTIAL CONSTRUCTION

06500 NON-RESIDENTIAL BUILDINGS

58230 NON-RESIDENTIAL CONSTRUCTION

06600 ROADS, HIGHWAYS & AIRSTRIPS

58240 ROAD HIGHWAY AIRSTRIP CONST.

COMMODITY CLASSIFICATION (COM5)

06700 GAS & OIL FACILITIES

58250 GAS AND OIL FACILITY CONST.

06800 DAMS & IRRIGATION PROJECTS

58260 DAMS AND IRRIGATION PROJECTS

06900 RR, TELEPHONE & TELEGRAPH INST.

58270 RAILWAY TELEPHONE TELEGRAPH CON.

07000 OTHER ENGINEERING STRUCTURES

58280 OTHER ENGINEERING CONSTRUCTION

07100 REPAIR CONSTRUCTION

58210 REPAIR CONSTRUCTION

07200 TRANSPORTATION SERVICES

58300 AIR TRANSPORTATION

58400 OTHER TRANSPORTATION

58500 SERV. INCIDENTAL TO TRANSPORT NES

58600 WATER TRANSPORTATION

58700 SERV. INCIDENTAL TO WATER TRANS.

58800 RAILWAY TRANSPORTATION

58900 TRUCK TRANSPORTATION

59000 BUS TRANSPORT, INTERURBAN & RURAL

59100 URBAN TRANSIT

59200 TAXICAB TRANSPORTATION

59400 HIGHWAY AND BRIDGE MAINTENANCE

59500 STORAGE

07300 TRANSPORTATION MARGINS

63400 TRANSPORTATION MARGINS

07400 COMMUNICATION

59600 RADIO & TELEVISION BROADCASTING

59700 TELEPHONE & TEL. COMMUNICATION

59800 POSTAL SERVICES

07500 ELECTRIC POWER

59900 ELECTRIC POWER

COMMODITY CLASSIFICATION(COM5)

07600 GAS & PIPELINE MARGINS

59300 PIPELINE TRANSPORTATION
60000 GAS DISTRIBUTION

07700 OTHER UTILITIES

60200 WATER AND OTHER UTILITIES

07800 WHOLESALE TRADE

60300 WHOLESALING SERVICE
60400 REPAIR&SERVICE BY WHOLESALE EST.
60500 RENTAL OF OFFICE EQUIPMENT

07900 RETAIL TRADE

60600 RETAILING SERVICE
60700 REPAIR & SER. BY RETAIL EST.

08000 FINANCE, INS., & REAL ESTATE

60810 IMPUTED SERVICE, BANKS
60820 OTH REAL EST (NON-RENT)&FIN.SERV
60900 INSURANCE & W.C.B.
61020 CASH RESIDENTIAL RENT
61030 OTHER RENT
61100 GOVT.ROYALTIES ON NAT. RESOURCES

08100 IMPUTED RENT

61010 IMPUTED RENT OWNER OCPD. DWEL.

08200 PERSONAL SERVICES

61200 EDUCATION AND RELATED SERVICES
61300 HOSPITAL SERVICES
61400 HEALTH SERVICES
61500 MOTION PICTURE ENTERTAINMENT
61600 OTHER RECREATIONAL SERVICES
61900 LAUNDRY,CLEANING&PRESSING SERV.
62000 ACCOMMODATION SERVICES
62100 MEALS
62200 SERV.MARG.ON ALCOHOLIC BEVERAGES
62300 PERSONAL SERVICES
62400 PHOTOGRAPHIC SERVICES
62500 MISC.REPAIR SER.EX BLDGS&DWELL.
62600 SERVICES TO BLDGS. & DWELLINGS
62700 OTHER SERV.TO BUSINESSES&PERSONS
62800 RENTAL OF AUTOMOBILES & TRUCKS
62900 TRADE ASSOCIATION DUES

COMMODITY CLASSIFICATION (COM5)

08300 BUSINESS SERVICES

36700 RENTAL DATA PROCESSING EQUIP.
61700 SERVICES TO BUSINESS MANAGEMENT
61800 ADVERTISING SERVICES
63000 RENTAL AO MACH&EQ.INCL.CONST.MAC

08400 DUMMY

63100 SPARE PARTS&MAINT.SUPPL.MACH&EQ.
63200 OFFICE SUPPLIES
63300 CAFETERIA SUPPLIES
63500 LABORATORY EQUIP. AND SUPPLIES
63600 TRAVELLING AND ENTERTAINMENT
63800 ADVERTISING & PROMOTION
63900 PURCHASED REPAIR SER.FOR MACH&EQ

08500 NON-COMPETING IMPORTS

70100 COTTON RAW & SEMI-PROCESSED
70200 NATURAL RUBBER & ALLIED GUMS
70300 CANE SUGAR , RAW
70400 COCOA BEANS, UNROASTED
70500 GREEN COFFEE
70600 TROPICAL FRUIT

08600 BALANCE OF PAYMENTS ADJUSTMENT

71000 UNALLOCATED EXPORTS & IMPORTS

08700 INCOME & EXPENDITURE ACC'T ADJ.

08800 GOVERNMENT GOODS & SERVICES

72000 GOVERNMENT GOODS & SERVICES

08900 INDIRECT COMMODITY TAXES

72100 INDIRECT COMMODITY TAXES

09000 SUBSIDIES

72200 SUBSIDIES

09100 OTHER INDIRECT TAXES

72300 INDIRECT TAXES NON-COMMODITY

COMMODITY CLASSIFICATION(COM5)

09200 WAGES & SALARIES

73000 WAGES AND SALARIES

09300 SUPPLEMENTARY LABOUR INCOME

73100 SUPPLEMENTARY LABOUR INCOME

09400 NET INCOME OF UNINCORP. BUSINESS

73200 NET INCOME UNINCORP BUSINESS

09510 HOUSEHOLD INVESTMENT INCOME

73310 HOUSEHOLD INVESTMENT INCOME

09520 DEPLETION & MINING WRITE-OFFS

73320 DEPLETION & MINING WRITE-OFFS

09530 CAPITAL COST ALLOWANCE

73330 CAPITAL COST ALLOWANCE

09540 OTHER SURPLUS

73340 OTHER SURPLUS

NOT SPECIFIED

63700

64000

64300

71100

72400

INDUSTRY IDENTIFICATION (IND4)
AGGREGATED TO 41 INDUSTRIES
00100 AGRICULTURE

00100 AGRICULTURE

00200 FORESTRY

00200 FORESTRY

00300 FISHING & TRAPPING

00300 FISHING, HUNTING & TRAPPING

00400 PETROLEUM & GAS WELLS

01000 PETROLEUM & GAS WELLS

00500 MINES

00400 BASE METAL & OTHER METAL MINES

00600 URANIUM MINES

00700 IRON MINES

00800 GOLD MINES

00900 COAL MINES

01200 ASBESTOS MINES

01300 GYPSUM MINES

01400 SALT MINES

01500 OTHER NON-METAL MINES

01600 QUARRIES & SAND PITS

01700 SERVICES INCIDENTAL TO MINING

00600 MEAT PRODUCTS INDUSTRIES

01800 SLAUGHTERING & MEAT PROCESSORS

01900 POULTRY PROCESSORS

00700 DAIRY PRODUCTS INDUSTRIES

02000 DAIRY FACTORIES

02100 PROCESS CHEESE MFGRS.

00800 FISH PRODUCTS INDUSTRIES

02200 FISH PRODUCTS INDUSTRY

00900 GRAIN MILLS

02400 FEED MFGRS.

02500 FLOUR MILLS

02600 BREAKFAST CEREAL MFGRS.

INDUSTRY IDENTIFICATION (IND4)

01000 OTHER FOOD & SOFT DRINK IND.

02300 FRUIT & VEGETABLE CANNERS
02700 BISCUIT MFGRS.
02800 BAKERIES
02900 CONFECTIONERY MFGRS.
03000 SUGAR REFINERIES
03100 VEGETABLE OIL MILLS
03200 MISCELLANEOUS FOOD INDUSTRIES
03300 SOFT DRINK MFGRS.

01100 ALCOHOLIC BEVERAGE IND.

03400 DISTILLERIES
03500 BREWERIES
03600 WINERIES

01200 TOBACCO INDUSTRIES

03700 LEAF TOBACCO PROCESSING
03800 TOBACCO PRODUCTS MFGRS.

01300 RUBBER INDUSTRIES

03900 RUBBER FOOTWEAR MFGRS.
04000 TIRE & TUBE MFGRS.
04100 OTHER RUBBER INDUSTRIES

01400 LEATHER INDUSTRIES

04200 LEATHER TANNERIES
04300 SHOE FACTORIES
04400 LEATHER GLOVE FACTORIES
04500 SMALL LEATHER GOODS MFGRS.

INDUSTRY IDENTIFICATION (IND4)

01500 TEXTILE INDUSTRIES

04600 COTTON YARN & CLOTH MILLS
04700 WOOL YARN MILLS
04800 WOOL CLOTH MILLS
04900 SYNTHETIC TEXTILE MILLS
05000 FIBRE PREPARING MILLS
05100 THREAD MILLS
05200 CORDAGE & TWINE INDUSTRY
05300 NARROW FABRIC MILLS
05400 PRESSED & PUNCHED FELT MILLS
05500 CARPET, MAT & RUG INDUSTRY
05600 TEXTILE DYEING & FINISHING
05700 LINOLEUM & COATED FABRICS IND.
05800 CANVAS PRODUCTS INDUSTRY
05900 COTTON & JUTE BAG INDUSTRY
06000 MISCELLANEOUS TEXTILE IND.
06100 HOSIERY MILLS
06200 OTHER KNITTING MILLS

01600 CLOTHING MANUFACTURERS

06300 CLOTHING INDUSTRIES

01700 WOOD INDUSTRIES

06400 SAWMILLS
06500 VENEER & PLYWOOD MILLS
06600 SASH & DOOR & PLANING MILLS
06700 WOODEN BOX FACTORIES
06800 COFFIN & CASKET INDUSTRY
06900 MISCELLANEOUS WOOD INDUSTRIES

01800 FURNITURE MANUFACTURERS

07000 HOUSEHOLD FURNITURE INDUSTRY
07100 OFFICE FURNITURE INDUSTRY
07200 OTHER FURNITURE INDUSTRIES
07300 ELECTRIC LAMP & SHADE INDUSTRY

01900 PULP & PAPER INDUSTRIES

07401 PULP & PAPER DUMMY IND.
07410 WOOD PULP
07420 PAPER PRODUCING
07430 PAPER CONVERTING
07440 PULP & PAPER OTHER ACTIVITIES
07500 ASPHALT ROOFING MFGRS.
07600 PAPER BOX & BAG MFGRS.
07700 OTHER PAPER CONVERTERS

INDUSTRY IDENTIFICATION (IND4)

02000 PRINTING & PUBLISHING

07800 PRINTING & PUBLISHING
07900 ENGRAVING, STEREOTYPING IND.

02100 IRON & STEEL

08001 IRON & STEEL DUMMY IND.
08010 COKE OVENS
08020 SINTER PLANT & BLAST FURNACES
08030 STEEL MILLS
08040 ROLLING MILLS
08050 FERRO ALLOY PRODUCERS
08060 IRON & STEEL OTHER ACTIVITIES
08100 STEEL PIPE & TUBE MILLS
08200 IRON FOUNDRIES

02200 NON-FERROUS METALS

08310 ALUMINUM SMELTING AND REFINING
08320 OTHER SMELTING AND REFINING
08400 ALUMINUM ROLLING & EXTRUDING
08500 COPPER & ALLOY ROLLING
08600 METAL CASTING & EXTRUDING NES

02300 METAL FABRICATING

08700 BOILER & PLATE WORKS
08800 FABRICATED STRUCT.METAL IND.
08900 ORNAMENTAL & ARCH. METAL IND.
09000 METAL STAMP. PRESS. & COAT.IND
09100 WIRE & WIRE PRODUCTS MFGRS.
09200 HARDWARE TOOL & CUTLERY MFGRS.
09300 HEATING EQUIPMENT MFGRS.
09400 MACHINE SHOPS
09500 MISC. METAL FABRICATING IND.

02400 MACHINERY

09600 AGRICULTURAL IMPLEMENT IND.
09700 MISC. MACHINERY & EQUIP. MFGRS
09800 COMM. REFRIG & AIR COND. MFGRS
09900 OFFICE & STORE MACHINERY MFGRS

02500 MOTOR VEHICLES

10100 MOTOR VEHICLE MFGRS.
10200 TRUCK BODY & TRAILER MFGRS.
10300 MOTOR VEH. PTS & ACCESS. MFGRS

INDUSTRY IDENTIFICATION (IND4)

02600 OTHER TRANSPORTATION EQUIPMENT

10000 AIRCRAFT & PARTS MFGRS.
10400 RAILROAD ROLLING STOCK IND.
10500 SHIPBUILDING & REPAIR
10600 MISC. TRANSP. EQUIP. IND.

02700 ELECTRICAL PRODUCTS

10700 SMALL ELECTRICAL APPLIANCES
10800 MAJOR APPLIANCES ELECT.& NON.
10900 RADIO & TELEVISION RECEIVERS
11000 COMMUNICATIONS EQUIPMENT MFGRS
11100 MFGRS OF ELECT. IND. EQUIP.
11200 BATTERY MFGRS.
11300 MFGRS OF ELECTRIC WIRE & CABLE
11400 MFGRS OF MISC. ELECT. PRODUCTS

02800 NON-METALLIC MINERAL PRODUCTS

11500 CEMENT MFGRS
11600 LIME MFGRS
11700 GYPSUM PRODUCTS MFGRS
11800 CONCRETE PRODUCTS MFGRS
11900 READY-MIX CONCRETE MFGRS
12000 CLAY PRODUCTS MFGRS
12100 REFRACTORIES MFGRS
12200 STONE PRODUCTS MFGRS
12300 MINERAL WOOL MFGRS
12400 ASBESTOS PRODUCTS MFGRS
12500 GLASS & GLASS PRODUCTS MFGRS
12600 ABRASIVES MFGRS
12700 OTHER NON-METALLIC PRODS. IND.

02900 PETROLEUM & COAL PRODUCTS

12800 PETROLEUM REFINERIES
12900 OTHER PETROL & COAL PROD. IND.

03000 INDUSTRIAL CHEMICALS

13700 MFGRS. OF INDUSTRIAL CHEMICALS

INDUSTRY IDENTIFICATION (IND4)

03100 CHEMICAL PRODUCTS

13000 EXPLOSIVES & AMMUNITION MFGRS
13100 MFGRS. OF MIXED FERTILIZERS
13200 MFGRS. OF PLAST. & SYNTH. RES.
13300 MFGRS. OF PHARM. & MEDICINES
13400 PAINT & VARNISH MFGRS.
13500 MFGRS. OF SOAP & CLEANING COMP
13600 MFGRS. OF TOILET PREPARATIONS
13800 OTHER CHEMICAL INDUSTRIES

03200 MISCELLANEOUS MANUFACTURERS

13900 SCIENT. & PROF. EQUIP. MFGRS.
14000 JEWELRY & SILVERWARE MFGRS.
14100 BROOM BRUSH & MOP INDUSTRY
14200 VENETIAN BLIND MFGRS.
14300 PLASTIC FABRICATORS, NES.
14400 SPORTING GOODS & TOY INDUSTRY
14500 FUR DRESSING & DYING INDUSTRY
14600 SIGNS & DISPLAYS INDUSTRY
14700 MISC. MANUFACTURING IND. NES

03300 CONSTRUCTION

14810 REPAIR CONSTRUCTION
14820 RESIDENTIAL CONSTRUCTION
14830 NON-RESIDENTIAL CONSTRUCTION
14840 ROAD HIGHWAY AIRSTRIP CONST.
14850 GAS AND OIL FACILITY CONST.
14860 DAMS AND IRRIGATION PROJECTS
14870 RAILWAY TELEPHONE TELEGRAPH CON.
14880 OTHER ENGINEERING CONSTRUCTION
14890 CONSTRUCTION OTHER ACTIVITIES.

03400 TRANSPORTATION & STORAGE

14900 AIR TRANSPORT
15000 SERVICES INCIDENTAL TO TRANSP.
15100 WATER TRANSPORT
15200 RAILWAY TRANSPORT
15300 TRUCK TRANSPORT
15400 BUS TRANSP. INTERURBAN & RURAL
15500 URBAN TRANSIT SYSTEMS
15600 TAXICAB OPERATIONS
15700 PIPELINE TRANSPORT
15800 HIGHWAY & BRIDGE MAINTENANCE
15900 STORAGE

INDUSTRY IDENTIFICATION (IND4)

03500 COMMUNICATION

16000 RADIO & TEL. BROADCASTING
16100 COMMUNICATION INDUSTRIES, NES.
16200 POST OFFICE

03600 UTILITIES

16300 ELECTRIC POWER
16400 GAS DISTRIBUTION
16500 WATER & OTHER UTILITIES

03700 TRADE

16600 WHOLESALE TRADE
16700 RETAIL TRADE

03800 FINANCE, INS., & REAL ESTATE

16820 GOVT. ROYALTIES ON NAT. RESOURCES
16830 BANKS AND CREDIT UNIONS
16840 INSURANCE
16850 OTHER FIN. INS. & REAL ESTATE

03900 OWNER-OCCUPIED DWELLINGS

16810 OWNER OCCUPIED DWELLINGS

04000 OTHER SERVICES

16900 EDUCATION & RELATED SERVICES
17000 HOSPITALS
17100 HEALTH SERVICES
17300 MOTION PICTURE THEATRES
17400 OTHER RECREATIONAL SERVICES
17500 PROF. SERVICES TO BUSINESS
17600 ADVERTISING SERVICES
17700 LAUNDRIES & CLEANERS
17800 HOTELS & RESTAURANTS
17900 OTHER PERSONAL SERVICES
18000 PHOTOGRAPHY
18100 MISC. REPAIR & MAINTENANCE
18200 MISC. SERVICES TO BUS. & PERS.

INDUSTRY IDENTIFICATION (IND4)

04100 DUMMY INDUSTRIES

18300 OPERATING SUPPLIES DUMMY
18400 OFFICE SUPPLIES DUMMY
18500 CAFETERIA REQU. DUMMY
18600 TRANSPORTATION MARGINS DUMMY
18700 LABORATORY SUPPLIES DUMMY
18800 TRAVEL & ENTERTAINMENT DUMMY
19000 ADVERTISING & PROMOTION DUMMY
19100 MACHINERY REPAIR SERVICES DUMMY

NOT SPECIFIED

18900

On the Numerical Solution of the Rectangular Input-Output Model

In the input-output model, the relationship between industry outputs and final demand is a set of simultaneous linear equations. For a given vector of final demand, the total impact on all industries is determined by solving this set of equations. As derived in Section 3, these equations are of the form

$$g = (I-A)^{-1}b \quad (1)$$

where $A = D(I-\hat{\mu}-\hat{\alpha})B \quad (2)$

and $b = D[(I-\hat{\mu}-\hat{\alpha})Ei + (I-\hat{\alpha})x] \quad (3)$

as shown in Equation 12 of that section. Because the matrices D and B are very large, it is impractical to calculate the inverse in 1). But, since D and B are relatively sparse, a computationally efficient algorithm for calculating g for any given b can be developed. The algorithm is based on the following matrix power series expansion for the inverse:

$$(I-A)^{-1} = I + A + A^2 + A^3 + \dots \quad (4)$$

The validity of this expansion, and its convergence properties, can be most easily seen by using eigenvalue analysis.

Matrices B and D , by definition, (Equations 3 and 5 of Section 3) have all non-negative elements between zero and one. Furthermore, the column sums of D are unity. It can easily be shown, therefore, that the matrix product DB column sums are the same as B . These column sums are less than unity since \hat{g} of Equation 3, Section 3, includes primary inputs. Now, since the non-zero elements of the diagonal matrix $I-\hat{\mu}-\hat{\alpha}$ are between zero and one, the column sums

of the A matrix of (2) are between zero and one. This last fact is sufficient to guarantee that the eigenvalues of A are less than unity in magnitude, and so the series of (4) is summable. In the remainder of this discussion, it is assumed that the eigenvalues of A are distinct, an assumption that is not required for the analysis but simplifies the exposition.

Any square matrix with distinct eigenvalues can be expressed in the form

$$A = P Q P^{-1} \quad (5)$$

where Q is a diagonal matrix of eigenvalues and P is a matrix whose columns are the corresponding eigenvectors (in the same order as the eigenvalues) that is:

$$Q = \begin{bmatrix} \lambda_1 & & & 0 \\ & \lambda_2 & & \\ & & \ddots & \\ 0 & & & \lambda_n \end{bmatrix} \quad P = \begin{bmatrix} p^1 & p^2 & - & - & p^n \end{bmatrix} \quad (6)$$

where $A p^1 = \lambda_1 p^1$ (definition of eigenvalue and eigenvector)

$$A p^2 = \lambda_2 p^2 \quad (7)$$

etc.

Assume for notational convenience that the eigenvalues are ordered by size so that

$$\lambda_1 > \lambda_2 > \lambda_3 \dots > \lambda_n$$

Now

$$\begin{aligned}
 (I-A)^{-1} &= (I - PQP^{-1})^{-1} \\
 &= (PIP^{-1} - PQP^{-1})^{-1} \\
 &= [P (I - Q) P^{-1}]^{-1}
 \end{aligned} \tag{8}$$

The inverse of a product is the product of the inverses in reverse order (provided all inverses exist) so that

$$\begin{aligned}
 (I-A)^{-1} &= (P^{-1})^{-1} (I - Q)^{-1} (P)^{-1} \\
 &= P (I - Q)^{-1} P^{-1}
 \end{aligned} \tag{9}$$

Since $I - Q$ is a diagonal matrix, the inverse can be written simply as

$$(I-Q)^{-1} = \begin{bmatrix} \frac{1}{1-\lambda_1} & & 0 \\ & \frac{1}{1-\lambda_2} & \\ 0 & & \frac{1}{1-\lambda_n} \end{bmatrix} \tag{10}$$

The right hand side of Equation 4 can be expressed as

$$I + A + A^2 + A^3 + \dots = I + PQP^{-1} + (PQP^{-1})^2 + \dots \tag{11}$$

The terms on the right of (11) can be simplified by noting that

$$(PQP^{-1})^2 = (PQP^{-1}) (PQ^1P^{-1}) = PQ^2P^{-1}$$

and, similarly,

$$(PQP^{-1})^n = PQ^nP^{-1} \tag{12}$$

Thus, (11) can be expressed as

$$I + A + A^2 + \dots = I + PQP^{-1} + PQ^2P^{-1} + PQ^3P^{-1} + \dots \quad (13)$$

or, simply,

$$I + A + A^2 + \dots = P[I + Q + Q^2 + \dots] P^{-1} \quad (14)$$

Now Q^n is a diagonal matrix with elements λ_1^n so that

$$I + Q + Q^2 + \dots = \begin{bmatrix} 1 + \lambda_1 + \lambda_1^2 & \dots & 0 \\ & 1 + \lambda_2 + \lambda_2^2 & \dots \\ & & \dots & 1 + \lambda_n + \lambda_n^2 + \dots \end{bmatrix} \quad (15)$$

Each scalar summation of (15) can be expressed in closed form so that

$$I + Q + Q^2 + \dots = \begin{bmatrix} \frac{1}{1 - \lambda_1} & & 0 \\ & \frac{1}{1 - \lambda_2} & \\ & & \dots & \frac{1}{1 - \lambda_n} \end{bmatrix} \quad (16)$$

By substituting (16) into (14), the expression for $I + A + A^2 + \dots$ is identical with the expression for $(I - A)^{-1}$ of (9) and (10) and, hence, the validity of the series expansion of (4) has been confirmed.

Returning now to the solution of Equation 1, we have

$$\begin{aligned} g &= (I - A)^{-1} b \\ &= (I + A + A^2 + A^3 + \dots) b \end{aligned} \quad (17)$$

An algorithm for determining the solution g is to evaluate the series term by term so that

$$g = b + Ab + A^2b + A^3b + \dots \quad (18)$$

The summation is terminated after $k+1$ terms when $A^k b$ is sufficiently small.

To determine how fast A^k goes to zero, we can use the same eigenvalue analysis. We have from (14) and (17) that

$$g = P (I + Q + Q^2 + Q^3 + \dots) P^{-1} b$$

Define the n -dimensional vectors, v ,

$$\begin{aligned} v^0 &= P^{-1} b \\ v^1 &= Q P^{-1} b \\ &\vdots \\ v^k &= Q^k P^{-1} b \end{aligned} \quad (19)$$

Clearly,

$$\begin{aligned} &\vdots \\ v^{k+1} &= Q v^k \end{aligned} \quad (20)$$

Now

$$Q^k = \begin{bmatrix} \lambda_1^k & & 0 \\ & \lambda_2^k & \\ 0 & & \lambda_n^k \end{bmatrix} \quad (21)$$

and, since λ_1 is the largest eigenvalue, for large k all the terms $\lambda_2^k, \lambda_3^k \dots \lambda_n^k$ are much smaller than λ_1^k , i.e.

$$Q^k \approx \begin{bmatrix} \lambda_1^k & & 0 \\ & 0 & \\ 0 & & 0 \end{bmatrix} \quad (22)$$

for large k . Applying (22) to (19) shows that only the first element of v^k is non-zero (for large k) and that $v^{k+1} \approx \lambda_1 v^k$. In the application of the algorithm (18), the series of vectors, v^k , cannot be observed. Instead, another series of vectors is calculated. Denote these vectors by u , where

$$u^k = A^k b = P v^k \quad (23)$$

For large k , u^k has only one non-zero element so that $P v^k$ is simply a constant times the first column of P , that is, $u^k \approx a p^1$ where a is some constant and p^1 is the eigenvector corresponding to λ_1 . Define the ratio τ of successive $A^k b$ vectors by

$$\tau_i^k = \frac{u_{i+1}^k}{u_i^k} \quad (24)$$

where u_i^k means the i^{th} component of the vector u^k . Then the constant a cancels out and the ratio becomes λ_1 for each i since

$$\begin{aligned} u^{k+1} &= A^{k+1} b = A (A^k b) \\ &= A (a p^1) = a (A p^1) = a \lambda_1 p^1 \end{aligned} \quad (25)$$

by definition of eigenvalue and eigenvector. Also, since eigenvectors are unique only up to a multiplicative constant, the vector u^k is the eigenvector for λ_1 . If sufficient terms have been evaluated such that the effects of all the smaller eigenvalues are negligible then the sum of the remaining terms of the sequence can be approximated in closed form. Suppose k terms have been summed so that

$$g \approx u^0 + u^1 + \dots + u^k \quad (26)$$

Then the remaining terms can be approximated by

$$\begin{aligned} u^{k+1} + u^{k+2} + \dots &= A u^k + A^2 u^k + A^3 u^k + \dots \\ &= \lambda_1 u^k + \lambda_1^2 u^k + \dots \\ &= \sum_{i=1}^{\infty} \lambda_1^i u^k \end{aligned} \quad (27)$$

But

$$\sum_{i=1}^{\infty} \lambda_1^i = \frac{\lambda_1}{1 - \lambda_1} \quad (28)$$

so that the final g vector is

$$g = u^0 + u^1 + \dots + u^k + \frac{\lambda_1}{1-\lambda_1} u^k \quad (29)$$

After many matrix multiplications, round-off errors may have injected some sizable error in the calculation of g . The original equation was (1)

$$g = (I-A)^{-1}b$$

or $(I-A) g = b \quad (30)$

The current solution, \bar{g} , can be checked for accuracy by calculating $(I-A)\bar{g}$ and comparing it with b . Define the error vector ϵ

$$\epsilon = b - (I-A)\bar{g} \quad (31)$$

The magnitude of the error can be approximated by examining the ratio of the norm of ϵ to the norm of b where

$$\text{norm } \epsilon = \|\epsilon\| = \left(\sum_{i=1}^n \epsilon_i^2 \right)^{\frac{1}{2}}$$

If the ratio indicates that \bar{g} is not close enough to the true solution, then a correction term can be calculated. From (31).

$$\epsilon = (I-A)g - (I-A)\bar{g} \quad (32)$$

where g is the true solution. Then, solving for g , yields

$$g = \bar{g} + (I-A)^{-1}\epsilon \quad (33)$$

So $(I-A)^{-1}\epsilon$ is the correction term for \bar{g} . Note that ϵ has already been calculated and presumably its components are much

smaller than \bar{g} . The correction $(I-A)^{-1}\epsilon$ can be calculated in exactly the same way as the \bar{g} was but fewer terms on the expansion will be needed since ϵ starts out small. This correction procedure eliminates some round-off error since the calculation is re-started with the original A matrix.

SOLUTION # 1 BALANCING RUN CLCSEC

SECTION C: INC.&EXPDT. ACC'T(DOMESTIC)

EXPENDITURE		INCOME
CONSUMER EXPENDITURE	37073904.	WAGES, SALARIES, S.L.I.
CAPITAL EXPENDITURE M&E	5610200.	NET INCOME CF UNINCCRP. BUS.
CAPITAL EXPENDITURE CONSTR.	9750391.	SURPLUS
INVENTORIES	1087276.	G.D.P. AT FACTOR COST
GOV'T CURRENT EXPENDITURE	10460894.	TAXES & DUTIES LESS SUBSIDIES
EXPORIS	12515699.	
IMPORTS LESS DUTIES	-12526329.	
GOVT. REVENUE FROM PRODUCTION	-695380.	
TOTAL	63276640.	63276304.

SECTION D: HOUSEHOLD ACCOUNT

EXPENDITURE		INCOME
CONSUMER EXPENDITURE CN G&S	37073904.	WAGES & SALARIES
PERSONAL INCOME TAXES	3502876.	SUPPL. LAECUR INCCME
PERSONAL SAVINGS	2664917.	NET INCCME CF UNINCCRP. BUS.
OTHER TRANSFERS TO GOVTS	2289928.	INVESTMENT INCCME
OTHER TRANSFERS	348989.	TRANSFERS
TOTAL	46280608.	46280608.

SECTION E: GOVERNMENT REVENUE

REVENUE	
COMMUNITY TAXES	4929360.
NON-COMMUNITY TAXES	2980918.
GOV'T GOODS & SERVICES	695380.
RESOURCE TAXES	248994.
IMPORT DUTIES	761919.
PERSONAL INCOME TAXES	3502876.
CORPORATION TAXES	2429431.
SUBSIDIES	-638610.
OTHER TRANSFERS FROM HHDS.	2289928.
TOTAL	17600196.

SECTION F: BUSINESS SECTOR ACCOUNT

REVENUE		EXPENDITURE
GROSS PRODUCTION	95251024.	INTERMEDIATE GOODS & SERVICES
SUBSIDIES	638610.	INDIRECT TAXES
		WAGES, SALARIES & S.L.I.
		NET INCCME CF UNINCCRP. BUS.
		INT. & DIV. PAID TO PERSONS
		DEPLETION & MINING W.-O.
		CAPITAL COST ALLOWANCE
		OTHER SURPLUS
TOTAL	95889632.	55889632.

SECTION A:		BALANCING RUN		CLOSED		TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
CCCC	INPLT-OUTPLT CCMOD. AGGN.SB	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS				
CC100	GRAIN	1281945.	7592.	1273971.	45205.	1987.	1515531.		
CC200	OTHER AGRICULTURE	304866.	-11837.	316280.	312357.	10158.	3155485.		
CC300	FOREST PRODUCTS	78813.	866.	77947.	25517.	3.	1063915.		
CC400	FISHING & TRAPPING PRODUCTS	52273.	255.	51980.	32030.	512.	152338.		
CC500	CRUDE PETROLEUM	324116.	1103.	323013.	447686.	C.	862522.		
CC600	NATURAL GAS	115338.	1659.	113675.	18825.	1237.	164678.		
CC700	SULPHUR	30925.	-1317.	32242.	5445.	C.	39166.		
CC800	COAL	33405.	14325.	19080.	169428.	4550.	81585.		
CC900	IRON ORE	381236.	5197.	372035.	57436.	C.	387930.		
CL000	ASBESTOS	165727.	387.	165340.	1951.	C.	170608.		
CL100	OTHER MINERALS	595732.	3577.	595752.	245335.	802.	1717945.		
CL200	MEAT PRODUCTS	142939.	-97.	143035.	105192.	4509.	2320299.		
CL300	DAIRY PRODUCTS	44309.	332.	43977.	24778.	3932.	1165246.		
CL400	FISH PRODUCTS	181595.	1078.	180517.	19464.	2101.	305025.		
CL500	FEED	22664.	101.	22563.	4669.	256.	475248.		
CL600	FLOUR & WHEAT	83669.	C.	83665.	C.	C.	208554.		
CL700	OTHER GRAIN MILL PRODUCTS	13208.	94.	13114.	11216.	936.	114652.		
CL800	BAKERY PRODUCTS	10817.	65.	10752.	11423.	902.	589286.		
CL900	SOFT DRINKS	1406.	10.	1396.	1755.	107.	227215.		
C2000	OTHER FOOD PRODUCTS	127176.	5235.	121941.	298615.	19127.	1510005.		
CL2100	ALCOHOLIC BEVERAGES	152120.	5548.	146172.	94225.	45596.	603676.		
C2200	TOBACCO	41565.	-135.	41700.	13671.	3377.	435825.		
C2300	TIRES & TUBES	16858.	780.	16078.	20890.	3319.	267941.		
CL2400	OTHER RUBBER PRODUCTS	20178.	4312.	15866.	91004.	11354.	216815.		
C2500	LEATHER PRODUCTS	21049.	649.	20400.	72439.	10561.	375617.		
C2600	YARNS & MAN-MADE FIBRES	36638.	2566.	34072.	130395.	9683.	346050.		
CL2700	FABRICS	40464.	6052.	34412.	328662.	59073.	581624.		
C2800	TEXTILE PRODUCTS	61247.	7770.	53450.	112372.	15163.	1452421.		
C2900	CLOTHING	63906.	2646.	61241.	134676.	26781.	583840.		
CL3000	LUMBER & PLYWOOD	572704.	3292.	569240.	74438.	4025.	1085202.		
CL3100	WOOD PRODUCTS	66827.	2579.	64248.	23457.	1498.	563579.		
C3200	FURNITURE & FIXTURES	189475.	8843.	180632.	42431.	7541.	616610.		
C3300	PULP&PAPER DUMMY & INTRA-TRANSFER	C.	0.	0.	C.	C.	2334336.		
C3400	PULP	519227.	192.	519035.	9727.	1.	630202.		
C3500	NEWSPRINT	942918.	23.	942895.	367.	50.	1025877.		
C3600	OTHER PAPER STOCK	83425.	519.	82906.	42498.	5436.	570271.		
CL3700	INDUSTRIAL PAPER PRODUCTS	41876.	1215.	40661.	74074.	7916.	822052.		
CL3800	HOUSEHOLD PAPER PRODUCTS	2842.	84.	2758.	5826.	598.	101578.		
C3900	PRINTED MATTER	57689.	15307.	41613.	186235.	7576.	1200401.		
CL4010	IRON & STEEL DUMMY & INTRA-TRANSFER	C.	C.	C.	C.	0.	1986992.		
CL4020	IRON & STEEL PRODUCTS	240537.	2629.	237900.	322592.	22311.	1733454.		
CL4100	ALUMINUM PRODUCTS	364038.	679.	363355.	76572.	3165.	589120.		
CL4200	COPPER & COPPER ALLOY PRODUCTS	286788.	186.	286602.	28707.	2001.	1111401.		
CL4300	NICKEL PRODUCTS	407008.	-2973.	405981.	57945.	627.	423000.		
CL4400	OTHER NON-FERROUS METAL PRODUCTS	204913.	-1649.	206562.	114543.	1757.	381002.		
CL4500	METAL FABRICATED PRODUCTS	336564.	59431.	277132.	511324.	59542.	2516714.		
CL4600	AGRICULTURAL MACHINERY	636073.	364040.	272032.	49518.	391.	288895.		
CL4700	OTHER INDUSTRIAL MACHINERY	2020356.	976347.	1043928.	1511131.	121315.	1508477.		
CL4800	MOTOR VEHICLES	1222889.	144396.	1078492.	564946.	17200.	2102920.		
CL4900	MOTOR VEHICLE PARTS	400029.	6.	393153.	1132765.	18384.	17160.		

SECTION A:

CLOSED

BALANCING RUN

CC000 INPUT-OUTPUT COMMCD. AGGA.SP

	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
C5000 OTHER TRANSPORT EQUIPMENT	1054610.	206007.	848602.	316408.	10356.	C.	1083263.
C5100 APPLIANCES	141540.	35004.	106536.	195564.	25694.	2.	538711.
C5200 OTHER ELECTRICAL EQUIPMENT	819597.	143136.	676460.	493228.	67680.	C.	1615821.
C5300 CEMENT & CONCRETE PRODUCTS	19201.	186.	19015.	3906.	128.	C.	605036.
C5400 OTHER NON-METALLIC MIN. PRDCT.	88661.	6442.	82215.	227677.	16214.	C.	543386.
C5500 FUELS & PETROLEUM	116625.	14029.	102545.	161113.	7312.	576.	1252605.
C5600 OTHER PETROLEUM & COAL PRDCT.	42999.	2417.	40582.	101185.	5224.	0.	304148.
C5700 INDUSTRIAL CHEMICALS	240397.	6946.	233437.	327800.	17110.	101.	543688.
C5800 FERTILIZERS	84392.	214.	84178.	18931.	83.	C.	164272.
C5900 PHARMACEUTICALS	82359.	11621.	70730.	53029.	5684.	30.	261674.
C6000 OTHER CHEMICAL PRODUCTS	78974.	3503.	75470.	175268.	15593.	C.	529114.
C6100 SCIENTIFIC EQUIPMENT	333402.	161071.	172321.	383752.	23416.	15.	257057.
C6200 PLASTIC PRODUCTS	18097.	1192.	16905.	80254.	7690.	C.	246034.
C6300 OTHER MANUFACTURED PRODUCTS	58056.	10370.	47665.	157808.	26380.	200.	487257.
C6400 RESIDENTIAL DWELLINGS	2175400.	0.	2179400.	C.	C.	C.	2175400.
C6500 NON-RESIDENTIAL BUILDINGS	3296502.	C.	3296502.	C.	0.	C.	3296502.
C6600 ROADS, HIGHWAYS & AIRSTRIPS	946399.	C.	946399.	C.	C.	C.	946399.
C6700 GAS & OIL FACILITIES	499709.	0.	499709.	C.	C.	C.	499709.
C6800 DAMS & IRRIGATION PROJECTS	856725.	C.	856725.	C.	0.	C.	856725.
C6900 RR, TELEPHONE & TELEGRAPH INST.	314574.	C.	314574.	C.	0.	C.	314574.
C7000 OTHER ENGINEERING STRUCTURES	1032537.	0.	1032537.	C.	C.	C.	1032537.
C7100 REPAIR CONSTRUCTION	531550.	0.	531550.	C.	0.	C.	1954501.
C7200 TRANSPORTATION SERVICES	479010.	106.	476219.	84998.	0.	19243.	4522821.
C7300 TRANSPORTATION MARGINS	375676.	C.	375676.	C.	C.	C.	2135901.
C7400 COMMUNICATION	114634.	457.	114172.	9300.	79.	C.	1590455.
C7500 ELECTRIC POWER	115899.	852.	118927.	10198.	C.	1257.	1246382.
C7600 GAS & PIPELINE MARGINS	128608.	0.	128608.	C.	C.	C.	521540.
C7700 OTHER UTILITIES	14977.	0.	2225.	C.	C.	166751.	25089.
C7800 WHOLESALE TRADE	981769.	C.	981769.	C.	0.	C.	4814495.
C7900 RETAIL TRADE	169063.	C.	169061.	C.	0.	70.	5509877.
C8000 FINANCE, INS., & REAL ESTATE	669189.	41344.	625286.	164362.	C.	88464.	6603866.
C8100 IMPUTED RENT	C.	C.	C.	C.	C.	C.	3355092.
C8200 PERSONAL SERVICES	303714.	18345.	271735.	126268.	0.	C.	5525785.
C8300 BUSINESS SERVICES	197810.	12635.	185007.	147992.	C.	1349.	1564412.
C8400 CUMM	1074537.	2.	1074534.	48.	3.	C.	6365238.
C8500 NON-COMPETING IMPORTS	1325.	901.	424.	329623.	11595.	C.	1.
C8600 BALANCE OF PAYMENTS ADJUSTMENT	1271533.	0.	1271533.	350991.	C.	C.	C.
C8700 INCOME & EXPENDITURE ACC'T ADJ.	C.	0.	0.	C.	0.	C.	C.
C8800 GOVERNMENT GOODS & SERVICES	23058.	C.	23058.	C.	C.	143180.	C.
C8900 INDIRECT COMMODITY TAXES	524273.	0.	524273.	C.	C.	C.	C.
C9000 SUBSIDIES	C.	0.	0.	C.	C.	C.	C.
C9100 OTHER INDIRECT TAXES	C.	C.	C.	C.	0.	C.	C.
C9200 WAGES & SALARIES	5708162.	C.	5708162.	C.	0.	C.	30782160.
C9300 SUPPLEMENTARY LABOUR INCOME	480158.	0.	480158.	C.	C.	C.	1845956.
C9400 NET INCOME OF UNINCORP. BUSINESS	C.	C.	C.	C.	0.	C.	6097703.
C9510 HOUSEHOLD INVESTMENT INCOME	0.	C.	C.	C.	C.	C.	3610797.
C9520 DEPLETION & MINING WRITE-OFFS	0.	0.	C.	C.	C.	C.	C.
C9530 CAPITAL COST ALLOWANCE	864397.	0.	864397.	C.	0.	C.	C.
C9540 OTHER SURPLUS	0.	C.	C.	C.	C.	C.	C.
C9600 TOTAL	39424448.	2322409.	37068096.	12016974.	761515.	695381.	150410128.

SECTION B:

CCCCC INPUT-OUTPUT HHLD. IND AGGREGATN

BALANCING RUN

CLCSED

	DOMESTIC FINAL DEMAND	TOTAL DOMESTIC OUTPUT	INDIRECT TAXES LESS SUBSIDIES	SALARIES & WAGES + S.L.I.	NET INCOME UNINCCRP BUSINESS	SURPLUS	EMPLOYMENT IN MAN-YEARS
OC100 AGRICULTURE	1596424.	4749193.	12155.	275549.	1976473.	726929.	92730.3
CC200 FCRESTRY	78837.	1073585.	50681.	412360.	20999.	87142.	70373.3
CC400 FISHING & TRAPPING	52056.	192887.	3208.	42910.	53000.	14428.	7660.9
CC400 PETROLEUM & GAS WELLS	486175.	1121136.	53159.	96728.	C.	591992.	12584.7
OC500 MINES	1133924.	2341562.	-3935.	695939.	7312.	862243.	102486.8
CC600 MEAT PRODUCTS INDUSTRIES	127565.	1888824.	9785.	202901.	2133.	76124.	37443.9
CC700 DAIRY PRODUCTS INDUSTRIES	51316.	1196421.	7454.	171449.	2626.	72156.	33695.1
OC800 FISH PRODUCTS INDUSTRIES	180354.	312254.	1960.	63211.	371.	17197.	18193.7
CC900 GRAIN MILLS	119838.	807739.	-1660.	80688.	2765.	78733.	14962.6
OC1000 OTHER FOOD & SOFT DRINK IND.	146537.	2417142.	30094.	506670.	13054.	301657.	106374.0
OC1100 ALCOHOLIC BEVERAGE IND.	152291.	628159.	15500.	113728.	43.	205205.	15646.6
OC1200 TCBACC INDUSTRIES	42227.	438632.	3263.	57452.	12.	63597.	10157.7
OC1300 RUBBER INDUSTRIES	47365.	570391.	5967.	155689.	72.	51565.	27499.4
OC1400 LEATHER INDUSTRIES	21594.	377516.	3214.	126454.	788.	8843.	32566.1
OC1500 TEXTILE INDUSTRIES	129999.	1708331.	15758.	444562.	2742.	159199.	99453.9
OC1600 CLOTHING MANUFACTURERS	53506.	1169869.	5086.	360575.	6471.	77281.	59653.0
OC1700 WOOD INDUSTRIES	626312.	1621317.	14014.	464121.	8951.	149028.	92002.1
OC1800 FURNITURE MANUFACTURERS	146480.	622454.	6090.	203254.	7012.	64890.	43605.1
OC1900 PULP & PAPER INDUSTRIES	1613095.	5558330.	54848.	765711.	547.	555243.	114549.3
OC2000 PRINTING & PUBLISHING	46933.	1231412.	15696.	494420.	21038.	82207.2	147300.
OC2100 IRON & STEEL	243462.	3674730.	16532.	430019.	222.	343537.	64431.4
OC2200 NON-FERRUCUS METALS	1329698.	2655745.	23611.	318416.	398.	168436.	46958.1
OC2300 METAL FABRICATING	494753.	2858513.	29711.	869669.	7239.	350332.	142340.7
OC2400 MACHINERY	1066326.	1705177.	13966.	487049.	811.	249546.	75416.5
OC2500 MOTOR VEHICLES	243462.	3674730.	16532.	430019.	222.	343537.	64431.4
OC2600 OTHER TRANSPORTATION EQUIPMENT	1449990.	3244857.	26125.	598186.	713.	225250.	83004.8
OC2700 ELECTRICAL PRODUCTS	850295.	1127416.	14082.	413522.	738.	80893.	63375.7
OC2800 NON-METALLIC MINERAL PRODUCTS	843448.	2398232.	19544.	710486.	386.	276380.	123515.6
OC2900 PETROLEUM & COAL PRODUCTS	104417.	1156536.	20290.	313214.	2095.	235840.	52374.6
OC3000 INDUSTRIAL CHEMICALS	124787.	1537074.	11523.	58224.	C.	113287.	11242.7
OC3100 CHEMICAL PRODUCTS	212077.	802916.	16520.	155641.	0.	213250.	21108.8
OC3200 MISCELLANEOUS MANUFACTURERS	231534.	1493031.	16917.	328309.	625.	204259.	51853.0
OC3300 CONSTRUCTION	273355.	1067832.	9543.	340391.	7038.	149893.	67798.8
OC3400 TRANSPORTATION & STORAGE	9701847.	11200942.	716517.	3565337.	358998.	624152.	510593.0
OC3500 COMMUNICATION	606162.	4906454.	58581.	1960430.	129253.	1104713.	336923.6
OC3600 UTILITIES	173511.	1706969.	-53629.	774336.	C.	585758.	141943.4
OC3700 TRADE	138155.	1501106.	23977.	350304.	C.	851215.	49024.4
OC3800 FINANCE, INS., & REAL ESTATE	1040244.	10214425.	278778.	4282294.	815079.	1517966.	996626.4
OC3900 OWNER-OCCUPIED DWELLINGS	605823.	6425862.	769874.	1651878.	488473.	1844331.	262270.6
OC4000 OTHER SERVICES	0.	3395098.	887374.	2084308.	679180.	1358792.	C.0
OC4100 DUMPY INDUSTRIES	402340.	6471252.	141643.	C.	1439012.	651375.	534714.5
OC4200 HOUSEHOLDS	1450210.	8501141.	323345.	C.	C.	C.	C.0
OC4300 TOTAL	6188320.	46280624.	3039834.	961385.	6097780.	63598.	189750.4
	34383984.	154354208.	6747395.	26440080.		15652140.	4940518.0

SOLUTION # 2 IMPACT OF \$1000000 ON EXOGENOUS INCOME (TRANSFERS), 1966 CLCSED I-O MCOEL

SECTION C: INC.&EXPDT. ACC'T(CCMESTIC)

EXPENDITURE		INCOME	
CONSUMER EXPENDITURE	1378574.	WAGES, SALARIES, S.L.I.	497394.
FINAL DEMAND	1.	NET INCOME OF UNINCORP. BUS.	151435.
IMPORTS LESS DUTIES	-187151.	SURPLUS	310816.
GCVT. REVENUE FROM PRODUCTION	-20504.	G.D.P. AT FACTOR COST	959645.
		TAXES & DUTIES LESS SUBSIDIES	211271.
TOTAL	1170920.		1170915.

SECTION D: HCUSEHCLD ACCOUNT

EXPENDITURE		INCOME	
CONSUMER EXPENDITURE ON G&S	1378574.	WAGES& SALARIES	473164.
PERSONAL INCOME TAXES	145126.	SUPPL. LABOUR INCGME	24225.
PERSONAL SAVINGS	99094.	NET INCOME OF UNINCORP. BUS.	151434.
OTHER TRANSFERS TO GOVTS	85150.	INVESTMENT INCGME	72107.
OTHER TRANSFERS	12977.	TRANSFERS	1000000.
TOTAL	1720920.		1720930.

SECTION E: GOVERNMENT REVENUE

REVENUE	
COMMODITY TAXES	128038.
NCN-COMMODITY TAXES	81851.
GCVT GOODS & SERVICES	20504.
RESOURCE TAXES	2842.
IMPORT DUTIES	14457.
PERSONAL INCOME TAXES	145126.
CORPORATION TAXES	47509.
SUBSIDIES	-13074.
OTHER TRANSFERS FROM HHLDs.	85150.
TOTAL	512402.

SECTION F: BUSINESS SECTOR ACCOUNT

REVENUE		EXPENDITURE	
GROSS PRODUCTION	1765814.	INTERMEDIATE GOODS & SERVICES	760518.
SUBSIDIES	13074.	INDIRECT TAXES	96854.
		WAGES, SALARIES & S.L.I.	461645.
		NET INCOME OF UNINCORP. BUS.	151435.
		INT. & CIV. PAID TO PERSONS	72107.
		DEPLETION & MINING W.-G.	6272.
		CAPITAL COST ALLOWANCE	126281.
		OTHER SURPLUS	103776.
TOTAL	1778888.		1778888.

SECTION A: IMPACT OF \$1000000 ON EXCENGUS INCOME (TRANSFERS), 1966 CLOSED I-O M

0000 INPUT-OUTPUT COMMOD. AGEN.SB

	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
CC100 GRAIN	0.	0.	0.	932.	39.	2.	5360.
CC200 OTHER AGRICULTURE	1.	0.	1.	9797.	344.	181.	91956.
00300 FOREST PRODUCTS	0.	0.	0.	125.	0.	0.	6255.
00400 FISHING & TRAPPING PRODUCTS	0.	0.	0.	771.	8.	3.	2238.
00500 CRUDE PETROLEUM	0.	0.	0.	10079.	0.	0.	12177.
00600 NATURAL GAS	0.	0.	0.	470.	31.	0.	1396.
00700 SULPHUR	0.	0.	0.	56.	0.	0.	57.
00800 COAL	0.	0.	0.	2342.	63.	0.	943.
00900 IRON ORE	0.	0.	0.	292.	0.	0.	96.
01000 ASBESTOS	0.	0.	0.	11.	0.	0.	36.
01100 OTHER MINERALS	0.	0.	0.	1018.	7.	0.	3609.
01200 MEAT PRODUCTS	0.	0.	0.	3507.	153.	0.	75838.
01300 DAIRY PRODUCTS	0.	0.	0.	858.	137.	0.	39640.
01400 FISH PRODUCTS	0.	0.	0.	621.	67.	0.	4205.
01500 FEED	0.	0.	0.	100.	6.	0.	9521.
01600 FLOUR & WHEAT	0.	0.	0.	0.	0.	0.	4266.
01700 OTHER GRAIN MILL PRODUCTS	0.	0.	0.	376.	32.	0.	3073.
01800 BAKERY PRODUCTS	0.	0.	0.	408.	32.	0.	20598.
01900 SOFT DRINKS	0.	0.	0.	64.	4.	0.	8096.
02000 OTHER FOOD PRODUCTS	0.	0.	0.	9630.	643.	0.	47761.
02100 ALCOHOLIC BEVERAGES	0.	0.	0.	2997.	1434.	0.	16245.
02200 TOBACCO	0.	0.	0.	506.	124.	0.	14547.
02300 TIRES & TUBES	0.	0.	0.	344.	56.	0.	4551.
02400 OTHER RUBBER PRODUCTS	0.	0.	0.	1814.	238.	0.	4253.
02500 LEATHER PRODUCTS	0.	0.	0.	2579.	378.	0.	12854.
02600 YARNS & MAN-MADE FIBRES	0.	0.	0.	3520.	280.	0.	9356.
02700 FABRICS	0.	0.	0.	5222.	1746.	0.	16485.
02800 TEXTILE PRODUCTS	0.	0.	0.	2963.	426.	1.	14868.
02900 CLOTHING	0.	0.	0.	4872.	970.	10.	51010.
03000 LUMBER & PLYWOOD	0.	0.	0.	600.	31.	1.	4337.
03100 WOOD PRODUCTS	0.	0.	0.	269.	15.	0.	4003.
03200 FURNITURE & FIXTURES	0.	0.	0.	1203.	210.	0.	14785.
03300 PULP&PAPER DUMMY & INTRA-TRANSFE	0.	0.	0.	0.	0.	0.	18458.
03400 PULP	0.	0.	0.	103.	0.	0.	1205.
03500 NEWSPRINT	0.	0.	0.	8.	1.	0.	2120.
03600 OTHER PAPER STOCK	0.	0.	0.	974.	122.	0.	11000.
03700 INDUSTRIAL PAPER PRODUCTS	0.	0.	0.	1705.	183.	0.	19280.
03800 HOUSEHOLD PAPER PRODUCTS	0.	0.	0.	201.	21.	0.	3264.
03900 PRINTED MATTER	0.	0.	0.	5421.	189.	132.	29310.
04010 IRON & STEEL DUMMY & INTRA-TRANS	0.	0.	0.	0.	0.	0.	13027.
04020 IRON & STEEL PRODUCTS	0.	0.	0.	1530.	99.	0.	5756.
04100 ALUMINUM PRODUCTS	0.	0.	0.	687.	29.	0.	1800.
04200 COPPER & COPPER ALLCY PRODUCTS	0.	0.	0.	158.	13.	0.	3671.
04300 NICKEL PRODUCTS	0.	0.	0.	134.	6.	0.	203.
04400 OTHER NON-FERROUS METAL PRODUCTS	0.	0.	0.	1094.	14.	0.	1625.
04500 METAL FABRICATED PRODUCTS	0.	0.	0.	5516.	657.	15.	20306.
04600 AGRICULTURAL MACHINERY	0.	0.	0.	776.	1.	0.	165.
04700 OTHER INDUSTRIAL MACHINERY	0.	0.	0.	6368.	485.	0.	4761.
04800 MOTOR VEHICLES	0.	0.	0.	15342.	409.	0.	37296.
04900 MOTOR VEHICLE PARTS	0.	0.	0.	20235.	326.	0.	11724.

SECTION A: IMPACT OF \$1000000 ON EXOGENOUS INCOME (TRANSFERS), 1966 CLCSED I-O M

CCCC INPUT-OUTPUT COMMOD. AGGN.SB	TOTAL FINAL DEMAND	CIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT CUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC CLTPUT
05000 OTHER TRANSPORT EQUIPMENT	0.	0.	0.	905.	71.	0.	4155.
05100 APPLIANCES	0.	0.	0.	5522.	828.	0.	14488.
05200 OTHER ELECTRICAL EQUIPMENT	0.	0.	0.	4381.	597.	0.	9739.
05300 CEMENT & CONCRETE PRODUCTS	0.	0.	0.	12.	0.	0.	1347.
05400 OTHER NON-METALLIC MIN. PRODS.	0.	0.	0.	2944.	238.	0.	5344.
05500 FUELS & PETROLEUM	0.	0.	0.	3885.	176.	14.	30765.
05600 OTHER PETROLEUM & CCAL PRCD.	0.	0.	0.	1370.	98.	0.	3973.
05700 INDUSTRIAL CHEMICALS	0.	0.	0.	5338.	276.	1.	11547.
05800 FERTILIZERS	0.	0.	0.	338.	1.	0.	1445.
05900 PHARMACEUTICALS	0.	0.	0.	1234.	143.	1.	6153.
06000 OTHER CHEMICAL PRODUCTS	0.	0.	0.	4063.	354.	0.	21258.
06100 SCIENTIFIC EQUIPMENT	0.	0.	0.	4400.	334.	0.	2286.
06200 PLASTIC PRODUCTS	0.	0.	0.	1554.	143.	0.	4735.
06300 OTHER MANUFACTURED PRODUCTS	0.	0.	0.	5828.	788.	5.	12617.
06400 RESIDENTIAL DWELLINGS	0.	0.	0.	0.	0.	0.	0.
06500 NON-RESIDENTIAL BUILDINGS	0.	0.	0.	0.	0.	0.	0.
06600 ROADS, HIGHWAYS & AIRSTRIPS	0.	0.	0.	0.	0.	0.	0.
06700 GAS & OIL FACILITIES	0.	0.	0.	0.	0.	0.	0.
06800 DAMS & IRRIGATION PROJECTS	0.	0.	0.	0.	0.	0.	0.
06900 RR, TELEPHONE & TELEGRAPH INST.	0.	0.	0.	0.	0.	0.	0.
07000 OTHER ENGINEERING STRUCTURES	0.	0.	0.	0.	0.	0.	0.
07100 REPAIR CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
07200 TRANSPORTATION SERVICES	0.	0.	0.	1334.	0.	428.	37285.
07300 TRANSPORTATION MARGINS	0.	0.	0.	0.	0.	0.	80820.
07400 COMMUNICATION	0.	0.	0.	0.	0.	0.	34641.
07500 ELECTRIC POWER	0.	0.	0.	232.	0.	2.	41611.
07600 GAS & PIPELINE MARGINS	0.	0.	0.	241.	0.	29.	29038.
07700 OTHER UTILITIES	0.	0.	0.	0.	0.	0.	10960.
07800 WHOLESALE TRADE	0.	0.	0.	0.	0.	5222.	911.
07900 RETAIL TRADE	0.	0.	0.	0.	0.	0.	84351.
08000 FINANCE, INS., & REAL ESTATE	0.	0.	0.	0.	0.	2.	181172.
08100 IMPUTED RENT	0.	0.	0.	3526.	0.	2381.	183523.
08200 PERSONAL SERVICES	0.	0.	0.	0.	0.	0.	126245.
08300 BUSINESS SERVICES	0.	0.	0.	2599.	0.	9102.	172803.
08400 DUMMY	0.	0.	0.	2512.	0.	20.	25248.
08500 NON-COMPETING IMPORTS	0.	0.	0.	1.	0.	0.	105974.
08600 BALANCE OF PAYMENTS ADJUSTMENT	0.	0.	0.	10640.	385.	0.	0.
08700 INCOME & EXPENDITURE ACC'T ADJ.	0.	0.	0.	5759.	0.	0.	0.
08800 GOVERNMENT GOODS & SERVICES	0.	0.	0.	0.	0.	0.	0.
08900 INDIRECT COMMODITY TAXES	0.	0.	0.	0.	0.	2951.	0.
09000 SUBSIDIES	0.	0.	0.	0.	0.	0.	0.
09100 OTHER INDIRECT TAXES	0.	0.	0.	0.	0.	0.	0.
09200 WAGES & SALARIES	0.	0.	0.	0.	0.	0.	0.
09300 SUPPLEMENTARY LABOUR INCOME	0.	0.	0.	0.	0.	0.	473164.
09400 NET INCOME OF UNINCORP. BUSINESS	0.	0.	0.	0.	0.	0.	24225.
09510 HOUSEHOLD INVESTMENT INCOME	0.	0.	0.	0.	0.	0.	151434.
09520 DEPLETION & MINING WRITE-OFFS	0.	0.	0.	0.	0.	0.	72107.
09530 CAPITAL COST ALLOWANCE	0.	0.	0.	0.	0.	0.	0.
09540 OTHER SURPLUS	0.	0.	0.	0.	0.	0.	0.
09600 TOTAL	1.	0.	1.	201620.	14457.	20504.	2658835.

SECTION B: IMPACT OF \$1000000 ON EXOGENOUS INCOME (TRANSFERS), 1966 CLOSED I-O M

0000 INPUT-OUTPUT HHLD. IND AGGREGATN	DOMESTIC FINAL DEMAND	TOTAL COMESTIC OUTPUT	INDIRECT TAXES LESS SUBSIDIES	SALARIES & WAGES + S.L.I.	NET INCOME UNINCORP BUSINESS	SURPLUS	EMPLOYMENT IN MAN-YEARS
00100 AGRICULTURE	1.	99451.	255.	5770.	41389.	15222.	1.9
00200 FORESTRY	0.	6872.	324.	2639.	134.	558.	0.5
00300 FISHING & TRAPPING	0.	2244.	37.	499.	617.	168.	0.1
00400 PETROLEUM & GAS WELLS	0.	14575.	691.	1258.	0.	7696.	0.2
00500 MINES	0.	5656.	-268.	194C.	26.	2151.	0.3
00600 MEAT PRODUCTS INDUSTRIES	0.	60921.	315.	6542.	69.	2467.	1.2
00700 DAIRY PRODUCTS INDUSTRIES	0.	39925.	250.	5722.	121.	2405.	1.1
00800 FISH PRODUCTS INDUSTRIES	0.	4390.	28.	889.	5.	242.	0.3
00900 GRAIN MILLS	0.	17071.	-25.	1769.	56.	1745.	0.3
01000 OTHER FOOD & SOFT DRINK IND.	0.	78807.	998.	16977.	451.	9914.	3.6
01100 ALCOHOLIC BEVERAGE IND.	0.	16654.	442.	3250.	1.	5173.	0.4
01200 TOBACCO INDUSTRIES	0.	14610.	108.	2017.	0.	2212.	0.4
01300 RUBBER INDUSTRIES	0.	10505.	107.	2994.	1.	1641.	0.6
01400 LEATHER INDUSTRIES	0.	12797.	106.	4321.	27.	296.	1.1
01500 TEXTILE INDUSTRIES	0.	47498.	426.	12436.	78.	4412.	2.8
01600 CLOTHING MANUFACTURERS	0.	40873.	178.	12598.	226.	2700.	3.5
01700 WOOD INDUSTRIES	0.	8886.	78.	2629.	52.	833.	0.5
01800 FURNITURE MANUFACTURERS	0.	14806.	136.	4910.	199.	1303.	1.1
01900 PULP & PAPER INDUSTRIES	0.	56163.	607.	9031.	14.	5286.	1.5
02000 PRINTING & PUBLISHING	0.	29939.	381.	12007.	512.	3581.	2.0
02100 IRON & STEEL	0.	22888.	97.	2594.	1.	2108.	0.4
02200 NON-FERROUS METALS	0.	8051.	69.	1035.	3.	530.	0.2
02300 METAL FABRICATING	0.	23493.	209.	6939.	63.	2764.	1.2
02400 MACHINERY	0.	8656.	58.	2479.	4.	1487.	0.4
02500 MOTOR VEHICLES	0.	50775.	427.	8811.	7.	3408.	1.2
02600 OTHER TRANSPORTATION EQUIPMENT	0.	4657.	41.	1396.	15.	606.	0.2
02700 ELECTRICAL PRODUCTS	0.	27385.	226.	7203.	5.	2790.	1.3
02800 NON-METALLIC MINERAL PRODUCTS	0.	7234.	115.	2261.	18.	1292.	0.4
02900 PETROLEUM & COAL PRODUCTS	0.	34350.	251.	2172.	0.	2480.	0.2
03000 INDUSTRIAL CHEMICALS	0.	9506.	204.	1920.	0.	2631.	0.3
03100 CHEMICAL PRODUCTS	0.	30994.	358.	6692.	14.	4056.	1.1
03200 MISCELLANEOUS MANUFACTURERS	0.	19851.	185.	6243.	119.	2652.	1.3
03300 CONSTRUCTION	0.	38852.	1701.	20648.	1465.	1511.	3.0
03400 TRANSPORTATION & STORAGE	0.	87446.	2238.	35620.	2506.	19153.	6.1
03500 COMMUNICATION	0.	42736.	-1022.	19324.	0.	14732.	3.6
03600 UTILITIES	0.	36058.	630.	8404.	0.	21335.	1.2
03700 TRADE	0.	270546.	8128.	113107.	23333.	38137.	27.9
03800 FINANCE, INS., & REAL ESTATE	0.	177303.	21826.	46761.	13685.	47275.	7.4
03900 OWNER-OCCUPIED DWELLINGS	0.	126245.	32597.	0.	25255.	50526.	0.0
04000 OTHER SERVICES	0.	186787.	4458.	57836.	40961.	18958.	15.5
04100 DUMMY INDUSTRIES	0.	140614.	5412.	0.	0.	0.	0.0
04200 HOUSEHOLDS	0.	1720921.	113035.	35749.	0.	2380.	7.1
04300 TOTAL	1.	3658831.	196814.	497394.	151435.	310817.	103.1

SOLUTION # 3 IMPACT OF \$1000000 ON HOUSING, 1966 OPEN I-O MODEL

SECTION C: INC.&EXPDT. ACC'T(DOMESTIC)

EXPENDITURE		
TOTAL FINAL DEMAND	1000000.	INCCME
IMPORTS LESS DUTIES	-107194.	WAGES, SALARIES, S.L.I.
GOVT. REVENUE FROM PRODUCTION	-1731.	NET INCOME OF UNINCORP. BUS.
		SURPLUS
		G.D.P. AT FACTOR COST
		TAXES & DUTIES LESS SUBSIDIES
TOTAL	891075.	

527603.
94306.
173283.
795192.
95866.
891058.

SECTION E: GOVERNMENT REVENUE

REVENUE	
COMMODITY TAXES	69927.
NON-COMMODITY TAXES	21046.
GOV'T GOODS & SERVICES	1731.
RESOURCE TAXES	2837.
IMPORT DUTIES	9179.
CORPORATION TAXES	29137.
SUBSIDIES	-4288.
TOTAL	129571.

SECTION F: BUSINESS SECTOR ACCOUNT

REVENUE		EXPENDITURE	
GROSS PRODUCTION	1785872.	INTERMEDIATE GOODS & SERVICES	903994.
SUBSIDIES	4288.	INDIRECT TAXES	90974.
		WAGES, SALARIES & S.L.I.	527603.
		NET INCOME OF UNINCORP. BUS.	94306.
		INT. & DIV. PAID TO PERSONS	43171.
		DEPLETION & MINING W.-O.	3107.
		CAPITAL COST ALLOWANCE	63359.
		OTHER SURPLUS	63646.
TOTAL	1790159.		1790159.

SECTION A: IMPACT OF \$1000000 ON HOUSING, 1966 OPEN I-O MODEL

00000 INPUT-OUTPUT COMMOD. AGGN.SB	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
00100 GRAIN	0.	0.	0.	49.	2.	0.	317.
00200 OTHER AGRICULTURE	0.	0.	0.	596.	25.	7.	3298.
00300 FOREST PRODUCTS	0.	0.	0.	1273.	0.	0.	29625.
00400 FISHING & TRAPPING PRODUCTS	0.	0.	0.	23.	0.	0.	112.
00500 CRUDE PETROLEUM	0.	0.	0.	3399.	0.	0.	4107.
00600 NATURAL GAS	0.	0.	0.	118.	8.	0.	350.
00700 SULPHUR	0.	0.	0.	43.	0.	0.	44.
00800 COAL	0.	0.	0.	1728.	46.	0.	698.
00900 IRON ORE	0.	0.	0.	710.	0.	0.	234.
01000 ASBESTOS	0.	0.	0.	38.	0.	0.	130.
01100 OTHER MINERALS	0.	0.	0.	2801.	11.	1.	9266.
01200 MEAT PRODUCTS	0.	0.	0.	63.	3.	0.	1065.
01300 DAIRY PRODUCTS	0.	0.	0.	14.	2.	0.	531.
01400 FISH PRODUCTS	0.	0.	0.	20.	2.	0.	135.
01500 FEED	0.	0.	0.	5.	0.	0.	501.
01600 FLOUR & WHEAT	0.	0.	0.	0.	0.	0.	103.
01700 OTHER GRAIN MILL PRODUCTS	0.	0.	0.	8.	1.	0.	72.
01800 BAKERY PRODUCTS	0.	0.	0.	3.	0.	0.	191.
01900 SOFT DRINKS	0.	0.	0.	0.	0.	0.	52.
02000 OTHER FOOD PRODUCTS	0.	0.	0.	374.	28.	0.	880.
02100 ALCOHOLIC BEVERAGES	0.	0.	0.	91.	45.	0.	292.
02200 TOBACCO	0.	0.	0.	1.	0.	0.	11.
02300 TIRES & TUBES	0.	0.	0.	183.	30.	0.	2182.
02400 OTHER RUBBER PRODUCTS	0.	0.	0.	1469.	182.	0.	2500.
02500 LEATHER PRODUCTS	0.	0.	0.	34.	4.	0.	161.
02600 YARNS & MAN-MADE FIBRES	0.	0.	0.	1016.	73.	0.	2398.
02700 FABRICS	0.	0.	0.	2208.	389.	0.	3389.
02800 TEXTILE PRODUCTS	0.	0.	0.	1440.	263.	0.	7653.
02900 CLOTHING	0.	0.	0.	13.	2.	0.	393.
03000 LUMBER & PLYWOOD	0.	0.	0.	10669.	782.	14.	75214.
03100 WOOD PRODUCTS	0.	0.	0.	2620.	279.	0.	71212.
03200 FURNITURE & FIXTURES	0.	0.	0.	25.	5.	0.	314.
03300 PULP&PAPER DUMMY & INTRA-TRANSFE	0.	0.	0.	0.	0.	0.	13104.
03400 PULP	0.	0.	0.	64.	0.	0.	752.
03500 NEWSPRINT	0.	0.	0.	2.	0.	0.	555.
03600 OTHER PAPER STOCK	0.	0.	0.	958.	118.	0.	9764.
03700 INDUSTRIAL PAPER PRODUCTS	0.	0.	0.	961.	103.	0.	15689.
03800 HOUSEHOLD PAPER PRODUCTS	0.	0.	0.	7.	1.	0.	210.
03900 PRINTED MATTER	0.	0.	0.	427.	38.	3.	7419.
04010 IRON & STEEL DUMMY & INTRA-TRANS	0.	0.	0.	0.	0.	0.	32004.
04020 IRON & STEEL PRODUCTS	0.	0.	0.	8704.	788.	0.	31854.
04100 ALUMINUM PRODUCTS	0.	0.	0.	1750.	73.	0.	4672.
04200 COPPER & COPPER ALLOY PRODUCTS	0.	0.	0.	1006.	90.	0.	15924.
04300 NICKEL PRODUCTS	0.	0.	0.	380.	15.	0.	585.
04400 OTHER NON-FERROUS METAL PRODUCTS	0.	0.	0.	2133.	41.	0.	5357.
04500 METAL FABRICATED PRODUCTS	0.	0.	0.	16187.	2169.	26.	101489.
04600 AGRICULTURAL MACHINERY	0.	0.	0.	129.	0.	0.	54.
04700 OTHER INDUSTRIAL MACHINERY	0.	0.	0.	8188.	704.	0.	10111.
04800 MOTOR VEHICLES	0.	0.	0.	23.	2.	0.	136.
04900 MOTOR VEHICLE PARTS	0.	0.	0.	3538.	60.	0.	1193.

SECTION A: IMPACT OF \$1000000 ON HOUSING, 1966 OPEN I-O MODEL

00000 INPUT-OUTPUT COMMOD. AGGN.SR	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
05000 OTHER TRANSPORT EQUIPMENT	0.	0.	0.	396.	24.	0.	862.
05100 APPLIANCES	0.	0.	0.	842.	123.	0.	3055.
05200 OTHER ELECTRICAL EQUIPMENT	0.	0.	0.	6192.	891.	0.	17256.
05300 CEMENT & CONCRETE PRODUCTS	0.	0.	0.	192.	6.	0.	32903.
05400 OTHER NON-METALLIC MIN. PRODS.	0.	0.	0.	11986.	854.	0.	38561.
05500 FUELS & PETROLEUM	0.	0.	0.	809.	37.	3.	7407.
05600 OTHER PETROLEUM & COAL PROD.	0.	0.	0.	1254.	49.	0.	5012.
05700 INDUSTRIAL CHEMICALS	0.	0.	0.	5063.	254.	1.	9091.
05800 FERTILIZERS	0.	0.	0.	21.	0.	0.	90.
05900 PHARMACEUTICALS	0.	0.	0.	43.	5.	0.	198.
06000 OTHER CHEMICAL PRODUCTS	0.	0.	0.	1824.	205.	0.	10569.
06100 SCIENTIFIC EQUIPMENT	0.	0.	0.	843.	58.	0.	440.
06200 PLASTIC PRODUCTS	0.	0.	0.	1825.	190.	0.	5004.
06300 OTHER MANUFACTURED PRODUCTS	0.	0.	0.	737.	89.	1.	2929.
06400 RESIDENTIAL DWELLINGS	1000000.	0.	1000000.	0.	0.	0.	1000000.
06500 NON-RESIDENTIAL BUILDINGS	0.	0.	0.	0.	0.	0.	0.
06600 ROADS, HIGHWAYS & AIRSTRIPS	0.	0.	0.	0.	0.	0.	0.
06700 GAS & OIL FACILITIES	0.	0.	0.	0.	0.	0.	0.
06800 DAMS & IRRIGATION PROJECTS	0.	0.	0.	0.	0.	0.	0.
06900 RR, TELEPHONE & TELEGRAPH INST.	0.	0.	0.	0.	0.	0.	0.
07000 OTHER ENGINEERING STRUCTURES	0.	0.	0.	0.	0.	0.	0.
07100 REPAIR CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
07200 TRANSPORTATION SERVICES	0.	0.	0.	899.	0.	108.	6691.
07300 TRANSPORTATION MARGINS	0.	0.	0.	0.	0.	0.	42661.
07400 COMMUNICATION	0.	0.	0.	62.	0.	0.	28827.
07500 ELECTRIC POWER	0.	0.	0.	53.	0.	0.	8949.
07600 GAS & PIPELINE MARGINS	0.	0.	0.	0.	0.	6.	6336.
07700 OTHER UTILITIES	0.	0.	0.	0.	0.	0.	2318.
07800 WHOLESALE TRADE	0.	0.	0.	0.	0.	300.	52.
07900 RETAIL TRADE	0.	0.	0.	0.	0.	0.	81426.
08000 FINANCE, INS., & REAL ESTATE	0.	0.	0.	775.	0.	0.	21625.
08100 IMPUTED RENT	0.	0.	0.	0.	0.	570.	28431.
08200 PERSONAL SERVICES	0.	0.	0.	0.	0.	0.	0.
08300 BUSINESS SERVICES	0.	0.	0.	718.	0.	46.	12680.
08400 DUMMY	0.	0.	0.	1812.	0.	15.	17129.
08500 NON-COMPETING IMPORTS	0.	0.	0.	1.	0.	0.	65473.
08600 BALANCE OF PAYMENTS ADJUSTMENT	0.	0.	0.	785.	9.	0.	0.
08700 INCOME & EXPENDITURE ACCT ADJ.	0.	0.	0.	3753.	0.	0.	0.
08800 GOVERNMENT GOODS & SERVICES	0.	0.	0.	0.	0.	0.	0.
08900 INDIRECT COMMODITY TAXES	0.	0.	0.	0.	0.	628.	0.
09000 SUBSIDIES	0.	0.	0.	0.	0.	0.	0.
09100 OTHER INDIRECT TAXES	0.	0.	0.	0.	0.	0.	0.
09200 WAGES & SALARIES	0.	0.	0.	0.	0.	0.	0.
09300 SUPPLEMENTARY LABOUR INCOME	0.	0.	0.	0.	0.	0.	0.
09400 NET INCOME OF UNINCORP. BUSINESS	0.	0.	0.	0.	0.	0.	0.
09510 HOUSEHOLD INVESTMENT INCOME	0.	0.	0.	0.	0.	0.	0.
09520 DEPLETION & MINING WRITE-OFFS	0.	0.	0.	0.	0.	0.	0.
09530 CAPITAL COST ALLOWANCE	0.	0.	0.	0.	0.	0.	0.
09540 OTHER SURPLUS	0.	0.	0.	0.	0.	0.	0.
09600 TOTAL	1000000.	0.	1000000.	116380.	9179.	1731.	1925277.

SECTION 8: IMPACT OF \$1000000 ON HOUSING, 1966 OPEN I-O MODEL

00000 INPUT-OUTPUT INDUSTRY AGGREGATN	DOMESTIC FINAL DEMAND	TOTAL DOMESTIC OUTPUT	INDIRECT TAXES LESS SUBSIDIES	SALARIES & WAGES + S.L.I.	NET INCOME UNINCORP BUSINESS	SURPLUS	EMPLOYMENT MAN-YEARS
00100 AGRICULTURE	0.	3956.	10.	230.	1646.	606.	0.1
00200 FORESTRY	0.	29153.	1376.	11198.	570.	2366.	1.9
00300 FISHING & TRAPPING	0.	117.	2.	26.	32.	9.	0.0
00400 PETROLEUM & GAS WELLS	0.	4786.	227.	413.	0.	2527.	0.1
00500 MINES	0.	10343.	-82.	3040.	88.	4079.	0.5
00600 MEAT PRODUCTS INDUSTRIES	0.	1289.	7.	138.	2.	54.	0.0
00700 DAIRY PRODUCTS INDUSTRIES	0.	1120.	4.	160.	3.	76.	0.0
00800 FISH PRODUCTS INDUSTRIES	0.	231.	1.	47.	0.	13.	0.0
00900 GRAIN MILLS	0.	1098.	-5.	106.	5.	108.	0.0
01000 OTHER FOOD & SOFT DRINK IND.	0.	1832.	22.	343.	9.	216.	0.1
01100 ALCOHOLIC BEVERAGE IND.	0.	485.	11.	85.	0.	159.	0.0
01200 TOBACCO INDUSTRIES	0.	46.	0.	6.	0.	7.	0.0
01300 RUBBER INDUSTRIES	0.	6766.	71.	1825.	1.	1141.	0.3
01400 LEATHER INDUSTRIES	0.	262.	3.	87.	1.	8.	0.0
01500 TEXTILE INDUSTRIES	0.	14593.	152.	3504.	17.	1439.	0.7
01600 CLOTHING MANUFACTURERS	0.	436.	2.	134.	2.	29.	0.0
01700 WOOD INDUSTRIES	0.	137019.	1156.	39341.	757.	15745.	7.8
01800 FURNITURE MANUFACTURERS	0.	5843.	52.	1950.	83.	542.	0.4
01900 PULP & PAPER INDUSTRIES	0.	40660.	443.	6572.	4.	4535.	1.0
02000 PRINTING & PUBLISHING	0.	7745.	99.	3116.	132.	927.	0.5
02100 IRON & STEEL	0.	61573.	286.	8356.	8.	5995.	1.3
02200 NON-FERROUS METALS	0.	26558.	184.	3232.	10.	1566.	0.5
02300 METAL FABRICATING	0.	95083.	1102.	28488.	205.	10123.	4.8
02400 MACHINERY	0.	14144.	102.	4084.	8.	1938.	0.6
02500 MOTOR VEHICLES	0.	6109.	40.	1393.	3.	513.	0.2
02600 OTHER TRANSPORTATION EQUIPMENT	0.	3148.	40.	1176.	1.	207.	0.2
02700 ELECTRICAL PRODUCTS	0.	27861.	238.	7673.	7.	2918.	1.4
02800 NON-METALLIC MINERAL PRODUCTS	0.	69884.	1263.	18528.	101.	15008.	3.1
02900 PETROLEUM & COAL PRODUCTS	0.	11788.	90.	769.	0.	883.	0.1
03000 INDUSTRIAL CHEMICALS	0.	6788.	140.	1316.	0.	1803.	0.2
03100 CHEMICAL PRODUCTS	0.	15008.	176.	3371.	8.	2089.	0.5
03200 MISCELLANEOUS MANUFACTURERS	0.	8560.	79.	2675.	49.	1306.	0.5
03300 CONSTRUCTION	1000000.	1007411.	70472.	293088.	75729.	49293.	42.1
03400 TRANSPORTATION & STORAGE	0.	44286.	882.	18022.	1305.	9040.	3.2
03500 COMMUNICATION	0.	9516.	-589.	4396.	0.	3288.	0.8
03600 UTILITIES	0.	7584.	112.	1773.	0.	4536.	0.2
03700 TRADE	0.	96220.	1951.	40785.	6103.	16257.	8.0
03800 FINANCE, INS., & REAL ESTATE	0.	27018.	2925.	6684.	1835.	9060.	1.1
03900 OWNER-OCCUPIED DWELLINGS	0.	0.	0.	0.	0.	0.	0.0
04000 OTHER SERVICES	0.	24651.	360.	9476.	5582.	2875.	2.0
04100 DUMMY INDUSTRIES	0.	94300.	3281.	C.	0.	0.	0.0
04200 TOTAL	1000000.	1925272.	86686.	527603.	94306.	173283.	84.3

SOLUTION # 4 IMPACT OF \$1000000 ON HOUSING, 1966 CLOSED I-O MODEL

SECTION C: INC.&EXPDT. ACC'T(DOMESTIC)

EXPENDITURE		INCOME	
CONSUMER EXPENDITURE	916869.	WAGES, SALARIES, S.L.I.	858411.
FINAL DEMAND	1000000.	NET INCOME OF UNINCORP. BUS.	195022.
IMPORTS LESS DUTIES	-231668.	SURPLUS	386001.
GOVT. REVENUE FROM PRODUCTION	-15368.	G.D.P. AT FACTOR COST	1433434.
		TAXES & DUTIES LESS SUBSIDIES	236378.
TOTAL	1669832.		1669812.

SECTION D: HOUSEHOLD ACCOUNT

EXPENDITURE		INCOME	
CONSUMER EXPENDITURE ON G&S	916869.	WAGES & SALARIES	813616.
PERSONAL INCOME TAXES	96521.	SUPPL. LABOUR INCOME	44791.
PERSONAL SAVINGS	65906.	NET INCOME OF UNINCORP. BUS.	195021.
OTHER TRANSFERS TO GOVTS	56632.	INVESTMENT INCOME	91127.
OTHER TRANSFERS	8631.	TRANSFERS	0.
TOTAL	1144557.		1144555.

SECTION E: GOVERNMENT REVENUE

REVENUE	
COMMODITY TAXES	155084.
NON-COMMODITY TAXES	75484.
GOVT GOODS & SERVICES	15368.
RESOURCE TAXES	4728.
IMPORT DUTIES	18794.
PERSONAL INCOME TAXES	96521.
CORPORATION TAXES	60734.
SUBSIDIES	-12983.
OTHER TRANSFERS FROM HHLDs.	56632.
TOTAL	470360.

SECTION F: BUSINESS SECTOR ACCOUNT

REVENUE		EXPENDITURE	
GROSS PRODUCTION	2560272.	INTERMEDIATE GOODS & SERVICES	1409790.
SUBSIDIES	12983.	INDIRECT TAXES	155389.
		WAGES, SALARIES & S.L.I.	834635.
		NET INCOME OF UNINCORP. BUS.	195022.
		INT. & DIV. PAID TO PERSONS	91128.
		DEPLETION & MINING W.-O.	7279.
		CAPITAL COST ALLOWANCE	147347.
		OTHER SURPLUS	132665.
TOTAL	2573255.		2973255.

SECTION A: IMPACT OF \$1000000 ON HOUSING, 1966 CLOSED I-C MODEL

00000	INPUT-OUTPUT COMMOD. AGGN.SB	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
00100	GRAIN	0.	0.	0.	669.	28.	1.	3882.
00200	OTHER AGRICULTURE	0.	0.	0.	7112.	254.	127.	64455.
00300	FOREST PRODUCTS	0.	0.	0.	1356.	0.	0.	33786.
00400	FISHING & TRAPPING PRODUCTS	0.	0.	0.	535.	6.	2.	1600.
00500	CRUDE PETROLEUM	0.	0.	0.	10103.	0.	0.	12205.
00600	NATURAL GAS	0.	0.	0.	430.	28.	0.	1279.
00700	SULPHUR	0.	0.	0.	80.	0.	0.	82.
00800	COAL	0.	0.	0.	3286.	88.	0.	1325.
00900	IRON CRE	0.	0.	0.	905.	0.	0.	298.
01000	ASBESTOS	0.	0.	0.	46.	0.	0.	154.
01100	OTHER MINERALS	0.	0.	0.	3478.	16.	1.	11666.
01200	MEAT PRODUCTS	0.	0.	0.	2396.	104.	0.	51504.
01300	DAIRY PRODUCTS	0.	0.	0.	584.	93.	0.	26895.
01400	FISH PRODUCTS	0.	0.	0.	423.	47.	0.	2932.
01500	FEED	0.	0.	0.	71.	4.	0.	6833.
01600	FLOUR & WHEAT	0.	0.	0.	0.	0.	0.	2940.
01700	OTHER GRAIN MILL PRODUCTS	0.	0.	0.	258.	22.	0.	2115.
01800	BAKERY PRODUCTS	0.	0.	0.	274.	22.	0.	13851.
01900	SOFT DRINKS	0.	0.	0.	43.	3.	0.	5437.
02000	OTHER FOOD PRODUCTS	0.	0.	0.	6775.	455.	0.	32646.
02100	ALCOHOLIC BEVERAGES	0.	0.	0.	2085.	999.	0.	11097.
02200	TOBACCO	0.	0.	0.	337.	82.	0.	9686.
02300	TIRES & TUBES	0.	0.	0.	412.	67.	0.	5209.
02400	OTHER RUBBER PRODUCTS	0.	0.	0.	2676.	340.	0.	5329.
02500	LEATHER PRODUCTS	0.	0.	0.	1750.	256.	0.	8711.
02600	YARNS & MAN-MADE FIBRES	0.	0.	0.	3357.	259.	0.	8620.
02700	FABRICS	0.	0.	0.	8541.	1550.	0.	14353.
02800	TEXTILE PRODUCTS	0.	0.	0.	3411.	546.	1.	17542.
02900	CLOTHING	0.	0.	0.	3253.	647.	7.	34319.
03000	LUMBER & PLYWOOD	0.	0.	0.	11068.	803.	15.	78059.
03100	WOOD PRODUCTS	0.	0.	0.	2799.	289.	0.	73875.
03200	FURNITURE & FIXTURES	0.	0.	0.	826.	144.	0.	10147.
03300	PULP&PAPER DUMMY & INTRA-TRANSF	0.	0.	0.	0.	0.	0.	25382.
03400	PULP	0.	0.	0.	132.	0.	0.	1553.
03500	NEWSPRINT	0.	0.	0.	8.	1.	0.	1965.
03600	OTHER PAPER STOCK	0.	0.	0.	1606.	199.	0.	17080.
03700	INDUSTRIAL PAPER PRODUCTS	0.	0.	0.	2096.	225.	0.	28512.
03800	HOUSEHOLD PAPER PRODUCTS	0.	0.	0.	140.	14.	0.	2380.
03900	PRINTED MATTER	0.	0.	0.	4032.	164.	91.	26912.
04010	IRON & STEEL DUMMY & INTRA-TRANS	0.	0.	0.	0.	0.	0.	40670.
04020	IRON & STEEL PRODUCTS	0.	0.	0.	9722.	854.	0.	38369.
04100	ALUMINUM PRODUCTS	0.	0.	0.	2207.	92.	0.	5869.
04200	COPPER & COPPER ALLCY PRODUCTS	0.	0.	0.	1111.	98.	0.	18366.
04300	NICKEL PRODUCTS	0.	0.	0.	469.	19.	0.	720.
04400	OTHER NON-FERROUS METAL PRODUCTS	0.	0.	0.	2861.	51.	0.	6440.
04500	METAL FABRICATED PRODUCTS	0.	0.	0.	19856.	2606.	36.	114993.
04600	AGRICULTURAL MACHINERY	0.	0.	0.	645.	1.	0.	164.
04700	OTHER INDUSTRIAL MACHINERY	0.	0.	0.	12423.	1026.	0.	13278.
04800	MOTOR VEHICLES	0.	0.	0.	10227.	274.	0.	24941.
04900	MOTOR VEHICLE PARTS	0.	0.	0.	16996.	276.	0.	5990.

SECTION A: IMPACT OF \$1000000 ON HOUSING, 1966 CLOSED I-C MODEL

00000	INPUT-OUTPUT COMMOD. AGGN.SR	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
05000	OTHER TRANSPORT EQUIPMENT	C.	C.	C.	997.	70.	C.	3652.
05100	APPLIANCES	C.	C.	C.	4515.	674.	C.	12690.
05200	OTHER ELECTRICAL EQUIPMENT	0.	0.	0.	9106.	1288.	C.	23733.
05300	CEMENT & CONCRETE PRODUCTS	C.	C.	C.	200.	6.	C.	33755.
05400	OTHER NON-METALLIC MIN. PRODS.	C.	C.	C.	13944.	1012.	C.	42115.
05500	FUELS & PETROLEUM	0.	0.	C.	3392.	155.	12.	27868.
05600	OTHER PETROLEUM & COAL PROD.	0.	0.	0.	2165.	114.	C.	7654.
05700	INDUSTRIAL CHEMICALS	0.	0.	C.	8614.	438.	1.	16771.
05800	FERTILIZERS	0.	0.	C.	246.	1.	C.	1051.
05900	PHARMACEUTICALS	C.	0.	0.	930.	100.	C.	4250.
06000	OTHER CHEMICAL PRODUCTS	C.	0.	C.	4527.	441.	0.	24708.
06100	SCIENTIFIC EQUIPMENT	0.	0.	C.	3770.	280.	C.	1961.
06200	PLASTIC PRODUCTS	C.	0.	0.	2859.	285.	C.	8153.
06300	OTHER MANUFACTURED PRODUCTS	C.	0.	C.	4614.	613.	5.	11320.
06400	RESIDENTIAL DWELLINGS	1000000.	0.	1000000.	C.	C.	C.	1000000.
06500	NON-RESIDENTIAL BUILDINGS	0.	0.	0.	0.	0.	C.	C.
06600	ROADS, HIGHWAYS & AIRSTRIPS	C.	C.	C.	C.	0.	C.	C.
06700	GAS & CIL FACILITIES	0.	0.	C.	C.	0.	C.	C.
06800	DAMS & IRRIGATION PROJECTS	0.	0.	C.	C.	0.	0.	0.
06900	RR, TELEPHONE & TELEGRAPH INST.	0.	0.	C.	C.	0.	C.	0.
07000	OTHER ENGINEERING STRUCTURES	0.	0.	C.	C.	0.	C.	0.
07100	REPAIR CONSTRUCTION	0.	0.	C.	C.	0.	C.	0.
07200	TRANSPORTATION SERVICES	0.	0.	0.	1787.	0.	C.	31488.
07300	TRANSPORTATION MARGINS	C.	0.	0.	C.	0.	393.	96414.
07400	COMMUNICATION	C.	0.	C.	C.	0.	0.	51866.
07500	ELECTRIC POWER	C.	0.	C.	217.	C.	2.	36624.
07600	GAS & PIPELINE MARGINS	C.	0.	C.	213.	C.	26.	25649.
07700	OTHER UTILITIES	C.	0.	0.	0.	0.	0.	9607.
07800	WHOLESALE TRADE	0.	C.	C.	C.	C.	3773.	658.
07900	RETAIL TRADE	0.	C.	0.	C.	0.	0.	137526.
08000	FINANCE, INS., & REAL ESTATE	0.	C.	C.	0.	0.	0.	142120.
08100	IMPUTED RENT	0.	C.	C.	3120.	0.	2154.	150489.
08200	PERSONAL SERVICES	0.	0.	C.	C.	0.	0.	83963.
08300	BUSINESS SERVICES	0.	0.	C.	2447.	0.	6100.	127605.
08400	DUMMY	0.	0.	C.	3483.	0.	28.	33922.
08500	NON-COMPETING IMPORTS	0.	0.	C.	1.	C.	C.	135954.
08600	BALANCE OF PAYMENTS ADJUSTMENT	C.	0.	0.	7862.	265.	C.	C.
08700	INCOME & EXPENDITURE ACCT ADJ.	0.	0.	C.	7583.	0.	C.	C.
08800	GOVERNMENT GOODS & SERVICES	0.	0.	C.	C.	0.	C.	0.
08900	INDIRECT COMMODITY TAXES	0.	0.	0.	0.	C.	2591.	C.
09000	SUBSIDIES	C.	C.	0.	0.	0.	0.	C.
09100	OTHER INDIRECT TAXES	0.	C.	C.	C.	0.	0.	0.
09200	WAGES & SALARIES	0.	0.	C.	0.	0.	0.	C.
09300	SUPPLEMENTARY LABOUR INCOME	0.	C.	C.	0.	0.	0.	813616.
09400	NET INCOME OF UNINCORP. BUSINESS	0.	0.	C.	C.	0.	C.	44791.
09510	HOUSEHOLD INVESTMENT INCOME	0.	0.	C.	C.	0.	C.	195021.
09520	DEPLETION & MINING WRITE-OFFS	0.	0.	C.	0.	0.	C.	51127.
09530	CAPITAL COST ALLOWANCE	0.	0.	C.	C.	0.	0.	C.
09540	OTHER SURPLUS	0.	0.	0.	0.	C.	C.	C.
09600	TOTAL	1000000.	C.	1000000.	250474.	18794.	15368.	4358704.

SECTION B: IMPACT OF \$1000000 ON HOUSING, 1966 CLOSED I-C MODEL

00000	INPUT-OUTPUT HHL.D. IND AGGREGATN	DOMESTIC FINAL DEMAND	TOTAL DOMESTIC OUTPUT	INDIRECT TAXES LESS SUBSIDIES	SALARIES & WAGES + S.L.I.	NET INCCME UNINCORP BUSINESS	SURPLUS	EMPLOYMENT IN MAN-YEARS
00100	AGRICULTURE	0.	70100.	179.	4067.	29173.	10730.	1.4
00200	FORESTRY	0.	33725.	1592.	12954.	660.	2737.	2.2
00300	FISHING & TRAPPING	0.	1610.	27.	358.	442.	120.	0.1
00400	PETROLEUM & GAS WELLS	0.	14480.	687.	1249.	C.	7646.	0.2
00500	MINES	0.	14105.	-260.	4331.	105.	5510.	0.7
00600	MEAT PRODUCTS INDUSTRIES	0.	41806.	216.	4489.	48.	1695.	0.8
00700	DAIRY PRODUCTS INDUSTRIES	0.	27673.	170.	3965.	84.	1676.	0.8
00800	FISH PRODUCTS INDUSTRIES	0.	3150.	20.	638.	4.	173.	0.2
00900	GRAIN MILLS	0.	12452.	-22.	1282.	42.	1268.	0.2
01000	OTHER FOOD & SOFT DRINK IND.	0.	54244.	685.	11634.	310.	6809.	2.4
01100	ALCOHOLIC BEVERAGE IND.	0.	11561.	306.	2247.	1.	3600.	0.3
01200	TOBACCO INDUSTRIES	0.	9763.	72.	1348.	0.	1478.	0.2
01300	RUBBER INDUSTRIES	0.	13752.	142.	3816.	2.	2232.	0.7
01400	LEATHER INDUSTRIES	0.	8773.	73.	2961.	19.	204.	0.8
01500	TEXTILE INDUSTRIES	0.	46183.	435.	11775.	69.	4373.	2.6
01600	CLOTHING MANUFACTURERS	0.	27619.	120.	8513.	153.	1825.	2.4
01700	WOOD INDUSTRIES	0.	142929.	1208.	41090.	792.	16298.	8.2
01800	FURNITURE MANUFACTURERS	0.	15690.	143.	5216.	216.	1409.	1.1
01900	PULP & PAPER INDUSTRIES	0.	78018.	847.	12579.	14.	8051.	2.0
02000	PRINTING & PUBLISHING	0.	27656.	352.	11101.	473.	3308.	1.8
02100	IRON & STEEL	0.	76800.	351.	10082.	9.	7398.	1.5
02200	NON-FERROUS METALS	0.	31514.	230.	3920.	11.	1918.	0.6
02300	METAL FABRICATING	0.	110707.	1241.	33102.	246.	11961.	5.5
02400	MACHINERY	0.	19901.	141.	5732.	11.	2927.	0.9
02500	MOTOR VEHICLES	0.	39878.	324.	7252.	8.	2780.	1.0
02600	OTHER TRANSPORTATION EQUIPMENT	0.	6244.	67.	2104.	11.	610.	0.3
02700	ELECTRICAL PRODUCTS	0.	46074.	388.	12464.	11.	4774.	2.2
02800	NON-METALLIC MINERAL PRODUCTS	0.	74695.	1339.	20032.	113.	15867.	3.4
02900	PETROLEUM & COAL PRODUCTS	0.	34633.	257.	2213.	0.	2533.	0.3
03000	INDUSTRIAL CHEMICALS	0.	13376.	275.	2593.	C.	3553.	0.4
03100	CHEMICAL PRODUCTS	0.	35622.	413.	7822.	17.	4787.	1.2
03200	MISCELLANEOUS MANUFACTURERS	0.	21762.	202.	6827.	128.	3070.	1.4
03300	CONSTRUCTION	1000000.	1033278.	71603.	306821.	76703.	50298.	44.0
03400	TRANSPORTATION & STORAGE	0.	102445.	2370.	41713.	2971.	21778.	7.2
03500	COMMUNICATION	0.	37939.	-1269.	17248.	0.	13085.	3.2
03600	UTILITIES	0.	31566.	531.	7362.	C.	18726.	1.0
03700	TRADE	0.	276419.	7357.	116005.	21621.	41621.	26.6
03800	FINANCE, INS., & REAL ESTATE	0.	144938.	17441.	37784.	10936.	40501.	6.0
03900	OWNER-OCCUPIED DWELLINGS	0.	83962.	21945.	C.	16796.	33603.	0.0
04000	OTHER SERVICES	0.	148878.	3325.	47941.	32824.	15483.	12.4
04100	DUMMY INDUSTRIES	0.	187822.	6880.	0.	C.	C.	0.0
04200	HOUSEHOLDS	0.	1144558.	75178.	23776.	0.	1583.	4.7
04300	TOTAL	1000000.	4358702.	217584.	858411.	195022.	380002.	152.9

Appendixes to Chapter 5

00000 INPUT-OUTPUT INDUSTRY AGGREGATE

PG

00100 AGRICULTURE	1.0108
00200 FORESTRY	1.0078
00300 FISHING & TRAPPING	1.0120
00400 PETROLEUM & GAS WELLS	1.0016
00500 MINES	1.0044
00600 MEAT PRODUCTS INDUSTRIES	1.0081
00700 DAIRY PRODUCTS INDUSTRIES	1.0090
00800 FISH PRODUCTS INDUSTRIES	1.0076
00900 GRAIN MILLS	1.0067
01000 OTHER FOOD & SOFT DRINK IND.	1.0043
01100 ALCOHOLIC BEVERAGE IND.	1.0033
01200 TOBACCO INDUSTRIES	1.0063
01300 RUBBER INDUSTRIES	1.0041
01400 LEATHER INDUSTRIES	1.0025
01500 TEXTILE INDUSTRIES	1.0032
01600 CLOTHING MANUFACTURERS	1.0019
01700 WOOD INDUSTRIES	1.0049
01800 FURNITURE MANUFACTURERS	1.0025
01900 PULP & PAPER INDUSTRIES	1.0068
02000 PRINTING & PUBLISHING	1.0028
02100 IRON & STEEL	1.0045
02200 NON-FERROUS METALS	1.0032
02300 METAL FABRICATING	1.0026
02400 MACHINERY	1.0023
02500 MOTOR VEHICLES	1.0017
02600 OTHER TRANSPORTATION EQUIPMENT	1.0024
02700 ELECTRICAL PRODUCTS	1.0022
02800 NON-METALLIC MINERAL PRODUCTS	1.0051
02900 PETROLEUM & COAL PRODUCTS	1.2934
03000 INDUSTRIAL CHEMICALS	1.0148
03100 CHEMICAL PRODUCTS	1.0070
03200 MISCELLANEOUS MANUFACTURERS	1.0029
03300 CONSTRUCTION	1.0049
03400 TRANSPORTATION & STORAGE	1.0100
03500 COMMUNICATION	1.0016
03600 UTILITIES	1.0020
03700 TRADE	1.0041
03800 FINANCE, INS., & REAL ESTATE	1.0013
03900 OWNER-OCCUPIED DWELLINGS	1.0004
04000 OTHER SERVICES	1.0028
04100 DUMMY INDUSTRIES	1.0070
04200 TOTAL	41.4868

COMMODITY PRICE INDEXES(PQD AND PQ), PM'S AND MU'S (FIRST EXPERIMENT)

00000 INPUT-OUTPUT COMMOD. AGGN.SB	PQD	PQ	PM	MU
00100 GRAIN	1.0108	1.0105	1.0000	0.0269
00200 OTHER AGRICULTURE	1.0107	1.0097	1.0000	0.0934
00300 FOREST PRODUCTS	1.0078	1.0076	1.0000	0.0240
00400 FISHING & TRAPPING PRODUCTS	1.0120	1.0097	1.0000	0.1873
00500 CRUDE PETROLEUM	1.0016	1.4537	2.0000	0.4529
00600 NATURAL GAS	1.0016	1.0012	1.0000	0.2519
00700 SULPHUR	1.0048	1.0024	1.0000	0.4941
00800 COAL	1.0047	1.0017	1.0000	0.7119
00900 IRON ORE	1.0071	1.0018	1.0000	0.7522
01000 ASBESTOS	1.0061	1.0047	1.0000	0.2289
01100 OTHER MINERALS	1.0036	1.0033	1.0000	0.0863
01200 MEAT PRODUCTS	1.0073	1.0069	1.0000	0.0505
01300 DAIRY PRODUCTS	1.0090	1.0088	1.0000	0.0214
01400 FISH PRODUCTS	1.0076	1.0066	1.0000	0.1287
01500 FEED	1.0064	1.0063	1.0000	0.0097
01600 FLOUR & WHEAT	1.0078	1.0078	1.0000	0.0
01700 OTHER GRAIN MILL PRODUCTS	1.0057	1.0053	1.0000	0.0669
01800 BAKERY PRODUCTS	1.0055	1.0054	1.0000	0.0190
01900 SOFT DRINKS	1.0043	1.0042	1.0000	0.0078
02000 OTHER FOOD PRODUCTS	1.0045	1.0037	1.0000	0.1448
02100 ALCOHOLIC BEVERAGES	1.0033	1.0027	1.0000	0.1718
02200 TOBACCO	1.0063	1.0061	1.0000	0.0354
02300 TIRES & TUBES	1.0040	1.0037	1.0000	0.0725
02400 OTHER RUBBER PRODUCTS	1.0043	1.0030	1.0000	0.2844
02500 LEATHER PRODUCTS	1.0025	1.0021	1.0000	0.1648
02600 YARNS & MAN-MADE FIBRES	1.0041	1.0032	1.0000	0.2159
02700 FABRICS	1.0032	1.0021	1.0000	0.3432
02800 TEXTILE PRODUCTS	1.0034	1.0029	1.0000	0.1467
02900 CLOTHING	1.0021	1.0019	1.0000	0.0792
03000 LUMBER & PLYWOOD	1.0053	1.0047	1.0000	0.1201
03100 WOOD PRODUCTS	1.0042	1.0040	1.0000	0.0386
03200 FURNITURE & FIXTURES	1.0026	1.0024	1.0000	0.0664
03300 PULP&PAPER DUMMY & INTRA-TRANSFEE	1.0065	1.0065	1.0000	0.0
03400 PULP	1.0070	1.0064	1.0000	0.0790
03500 NEWSPRINT	1.0066	1.0066	1.0000	0.0039
03600 OTHER PAPER STOCK	1.0066	1.0061	1.0000	0.0778
03700 INDUSTRIAL PAPER PRODUCTS	1.0067	1.0062	1.0000	0.0812
03800 HOUSEHOLD PAPER PRODUCTS	1.0078	1.0074	1.0000	0.0522
03900 PRINTED MATTER	1.0029	1.0026	1.0000	0.1084
04010 IRON & STEEL DUMMY & INTRA-TRANS	1.0046	1.0046	1.0000	0.0
04020 IRON & STEEL PRODUCTS	1.0043	1.0036	1.0000	0.1529
04100 ALUMINUM PRODUCTS	1.0044	1.0036	1.0000	0.1773
04200 COPPER & COPPER ALLOY PRODUCTS	1.0028	1.0027	1.0000	0.0305
04300 NICKEL PRODUCTS	1.0027	1.0020	1.0000	0.2606
04400 OTHER NON-FERROUS METAL PRODUCTS	1.0029	1.0020	1.0000	0.3172
04500 METAL FARRICATED PRODUCTS	1.0026	1.0022	1.0000	0.1433
04600 AGRICULTURAL MACHINERY	1.0023	1.0009	1.0000	0.6304
04700 OTHER INDUSTRIAL MACHINERY	1.0024	1.0012	1.0000	0.5182
04800 MOTOR VEHICLES	1.0016	1.0012	1.0000	0.2567
04900 MOTOR VEHICLE PARTS	1.0021	1.0008	1.0000	0.6003

COMMODITY PRICE INDEXES(PQD AND PQ), PM'S AND MU'S (FIRST EXPERIMENT)

00000 INPUT-OUTPUT COMMOD. AGGN.SB	PQD	PQ	PM	MU
05000 OTHER TRANSPORT EQUIPMENT	1.0026	1.0019	1.0000	0.2987
05100 APPLIANCES	1.0022	1.0016	1.0000	0.2480
05200 OTHER ELECTRICAL EQUIPMENT	1.0022	1.0018	1.0000	0.2110
05300 CEMENT & CONCRETE PRODUCTS	1.0058	1.0057	1.0000	0.0000
05400 OTHER NON-METALLIC MIN. PRODS.	1.0044	1.0033	1.0000	0.2500
05500 FUELS & PETROLEUM	1.2966	1.2659	1.0000	0.1038
05600 OTHER PETROLEUM & COAL PROD.	1.1925	1.1627	1.0000	0.1922
05700 INDUSTRIAL CHEMICALS	1.0133	1.0101	1.0000	0.2262
05800 FERTILIZERS	1.0052	1.0042	1.0000	0.1896
05900 PHARMACEUTICALS	1.0043	1.0035	1.0000	0.1782
06000 OTHER CHEMICAL PRODUCTS	1.0077	1.0065	1.0000	0.1274
06100 SCIENTIFIC EQUIPMENT	1.0021	1.0006	1.0000	0.2182
06200 PLASTIC PRODUCTS	1.0043	1.0032	1.0000	0.2000
06300 OTHER MANUFACTURED PRODUCTS	1.0040	1.0031	1.0000	0.2177
06400 RESIDENTIAL DWELLINGS	1.0034	1.0034	1.0000	0.0
06500 NON-RESIDENTIAL BUILDINGS	1.0034	1.0034	1.0000	0.0
06600 ROADS, HIGHWAYS & AIRSTRIPS	1.0207	1.0207	1.0000	0.0
06700 GAS & OIL FACILITIES	1.0054	1.0054	1.0000	0.0
06800 DAMS & IRRIGATION PROJECTS	1.0044	1.0044	1.0000	0.0
06900 RR, TELEPHONE & TELEGRAPH INST.	1.0031	1.0031	1.0000	0.0
07000 OTHER ENGINEERING STRUCTURES	1.0030	1.0030	1.0000	0.0
07100 REPAIR CONSTRUCTION	1.0027	1.0027	1.0000	0.0
07200 TRANSPORTATION SERVICES	1.0106	1.0103	1.0000	0.0245
07300 TRANSPORTATION MARGINS	1.0104	1.0104	1.0000	0.0
07400 COMMUNICATION	1.0016	1.0016	1.0000	0.0059
07500 ELECTRIC POWER	1.0020	1.0020	1.0000	0.0082
07600 GAS & PIPELINE MARGINS	1.0008	1.0008	1.0000	0.0
07700 OTHER UTILITIES	1.0166	1.0166	1.0000	0.0
07800 WHOLESALE TRADE	1.0056	1.0056	1.0000	0.0
07900 RETAIL TRADE	1.0032	1.0032	1.0000	0.0
08000 FINANCE, INS., & REAL ESTATE	1.0022	1.0021	1.0000	0.0242
08100 IMPUTED RENT	1.0004	1.0004	1.0000	0.0
08200 PERSONAL SERVICES	1.0032	1.0031	1.0000	0.0199
08300 BUSINESS SERVICES	1.0022	1.0021	1.0000	0.0867
08400 DUMMY	1.0058	1.0058	1.0000	0.0000
08500 NON-COMPETING IMPORTS	1.0000	1.0000	1.0000	1.0000
08600 BALANCE OF PAYMENTS ADJUSTMENT	1.0000	0.0	0.0	0.0
08700 INCOME & EXPENDITURE ACC'T ADJ.	1.0000	0.0	0.0	0.0
08800 GOVERNMENT GOODS & SERVICES	1.0000	0.0	0.0	0.0
08900 INDIRECT COMMODITY TAXES	1.0000	0.0	0.0	0.0
09000 SUBSIDIES	1.0000	0.0	0.0	0.0
09100 OTHER INDIRECT TAXES	1.0000	0.0	0.0	0.0
09200 WAGES & SALARIES	1.0000	0.0	0.0	0.0
09300 SUPPLEMENTARY LABOUR INCOME	1.0000	0.0	0.0	0.0
09400 NET INCOME OF UNINCORP. BUSINESS	1.0000	0.0	0.0	0.0
09510 HOUSEHOLD INVESTMENT INCOME	1.0000	0.0	0.0	0.0
09520 DEPLETION & MINING WRITE-OFFS	1.0000	0.0	0.0	0.0
09530 CAPITAL COST ALLOWANCE	1.0000	0.0	0.0	0.0
09540 OTHER SURPLUS	1.0000	0.0	0.0	0.0
09600 TOTAL	99.9089	87.2513	87.0000	13.4628

00000 INPUT-OUTPUT INDUSTRY AGGREGATN

PG

00100 AGRICULTURE	1.0183
00200 FORESTRY	1.0527
00300 FISHING & TRAPPING	1.0380
00400 PETROLEUM & GAS WELLS	1.0172
00500 MINES	1.0402
00600 MEAT PRODUCTS INDUSTRIES	1.0305
00700 DAIRY PRODUCTS INDUSTRIES	1.0344
00800 FISH PRODUCTS INDUSTRIES	1.0470
00900 GRAIN MILLS	1.0356
01000 OTHER FOOD & SOFT DRINK IND.	1.0395
01100 ALCOHOLIC BEVERAGE IND.	1.0352
01200 TOBACCO INDUSTRIES	1.0323
01300 RUBBER INDUSTRIES	1.0425
01400 LEATHER INDUSTRIES	1.0524
01500 TEXTILE INDUSTRIES	1.0451
01600 CLOTHING MANUFACTURERS	1.0506
01700 WOOD INDUSTRIES	1.0555
01800 FURNITURE MANUFACTURERS	1.0535
01900 PULP & PAPER INDUSTRIES	1.0464
02000 PRINTING & PUBLISHING	1.0581
02100 IRON & STEEL	1.0424
02200 NON-FERROUS METALS	1.0358
02300 METAL FABRICATING	1.0495
02400 MACHINERY	1.0464
02500 MOTOR VEHICLES	1.0365
02600 OTHER TRANSPORTATION EQUIPMENT	1.0515
02700 ELECTRICAL PRODUCTS	1.0489
02800 NON-METALLIC MINERAL PRODUCTS	1.0429
02900 PETROLEUM & COAL PRODUCTS	1.0181
03000 INDUSTRIAL CHEMICALS	1.0341
03100 CHEMICAL PRODUCTS	1.0432
03200 MISCELLANEOUS MANUFACTURERS	1.0479
03300 CONSTRUCTION	1.0522
03400 TRANSPORTATION & STORAGE	1.0500
03500 COMMUNICATION	1.0521
03600 UTILITIES	1.0278
03700 TRADE	1.0529
03800 FINANCE, INS., & REAL ESTATE	1.0359
03900 OWNER-OCCUPIED DWELLINGS	1.0091
04000 OTHER SERVICES	1.0434
04100 DUMMY INDUSTRIES	1.0425
04200 TOTAL	42.6880

COMMODITY PRICE INDEXES(PQD AND PQ), PM'S AND MU'S (SECOND EXPERIMENT)

00000 INPUT-OUTPUT COMMOD. AGGN.SB	PQD	PQ	PM	MU
00100 GRAIN	1.0183	1.0178	1.0000	0.0269
00200 OTHER AGRICULTURE	1.0184	1.0167	1.0000	0.0934
00300 FOREST PRODUCTS	1.0520	1.0508	1.0000	0.0240
00400 FISHING & TRAPPING PRODUCTS	1.0380	1.0309	1.0000	0.1873
00500 CRUDE PETROLEUM	1.0172	1.0094	1.0000	0.4529
00600 NATURAL GAS	1.0172	1.0129	1.0000	0.2519
00700 SULPHUR	1.0179	1.0091	1.0000	0.4941
00800 COAL	1.0630	1.0181	1.0000	0.7119
00900 IRON ORE	1.0421	1.0104	1.0000	0.7522
01000 ASBESTOS	1.0372	1.0287	1.0000	0.2289
01100 OTHER MINERALS	1.0390	1.0362	1.0000	0.0863
01200 MEAT PRODUCTS	1.0337	1.0320	1.0000	0.0505
01300 DAIRY PRODUCTS	1.0345	1.0338	1.0000	0.0214
01400 FISH PRODUCTS	1.0470	1.0409	1.0000	0.1287
01500 FEED	1.0334	1.0331	1.0000	0.0097
01600 FLOUR & WHEAT	1.0391	1.0391	1.0000	0.0
01700 OTHER GRAIN MILL PRODUCTS	1.0382	1.0357	1.0000	0.0669
01800 BAKERY PRODUCTS	1.0505	1.0496	1.0000	0.0190
01900 SOFT DRINKS	1.0501	1.0497	1.0000	0.0078
02000 OTHER FOOD PRODUCTS	1.0342	1.0294	1.0000	0.1448
02100 ALCOHOLIC BEVERAGES	1.0352	1.0300	1.0000	0.1718
02200 TOBACCO	1.0323	1.0313	1.0000	0.0354
02300 TIRES & TUBES	1.0393	1.0365	1.0000	0.0725
02400 OTHER RUBBER PRODUCTS	1.0461	1.0329	1.0000	0.2844
02500 LEATHER PRODUCTS	1.0524	1.0442	1.0000	0.1648
02600 YARNS & MAN-MADE FIBRES	1.0439	1.0345	1.0000	0.2159
02700 FABRICS	1.0441	1.0291	1.0000	0.3432
02800 TEXTILE PRODUCTS	1.0447	1.0382	1.0000	0.1467
02900 CLOTHING	1.0507	1.0467	1.0000	0.0792
03000 LUMBER & PLYWOOD	1.0563	1.0495	1.0000	0.1201
03100 WOOD PRODUCTS	1.0537	1.0516	1.0000	0.0386
03200 FURNITURE & FIXTURES	1.0527	1.0492	1.0000	0.0664
03300 PULP&PAPER DUMMY & INTRA-TRANSFE	1.0458	1.0458	1.0000	0.0
03400 PULP	1.0472	1.0435	1.0000	0.0790
03500 NEWSPRINT	1.0455	1.0453	1.0000	0.0039
03600 OTHER PAPER STOCK	1.0456	1.0421	1.0000	0.0778
03700 INDUSTRIAL PAPER PRODUCTS	1.0490	1.0451	1.0000	0.0812
03800 HOUSEHOLD PAPER PRODUCTS	1.0469	1.0444	1.0000	0.0522
03900 PRINTED MATTER	1.0578	1.0516	1.0000	0.1084
04010 IRON & STEEL DUMMY & INTRA-TRANS	1.0424	1.0424	1.0000	0.0
04020 IRON & STEEL PRODUCTS	1.0429	1.0362	1.0000	0.1529
04100 ALUMINUM PRODUCTS	1.0329	1.0264	1.0000	0.1773
04200 COPPER & COPPER ALLOY PRODUCTS	1.0374	1.0362	1.0000	0.0305
04300 NICKEL PRODUCTS	1.0367	1.0271	1.0000	0.2606
04400 OTHER NON-FERROUS METAL PRODUCTS	1.0385	1.0261	1.0000	0.3172
04500 METAL FABRICATED PRODUCTS	1.0490	1.0419	1.0000	0.1433
04600 AGRICULTURAL MACHINERY	1.0465	1.0172	1.0000	0.6304
04700 OTHER INDUSTRIAL MACHINERY	1.0472	1.0229	1.0000	0.5182
04800 MOTOR VEHICLES	1.0337	1.0251	1.0000	0.2567
04900 MOTOR VEHICLE PARTS	1.0434	1.0175	1.0000	0.6003

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COMMODITY PRICE INDEXES(PQD AND PQ), PM'S AND MU'S (SECOND EXPERIMENT)

00000 INPUT-OUTPUT COMMOD. AGGN.SH	PQD	PQ	PM	MU
05000 OTHER TRANSPORT EQUIPMENT	1.0513	1.0355	1.0000	0.2987
05100 APPLIANCES	1.0466	1.0341	1.0000	0.2680
05200 OTHER ELECTRICAL EQUIPMENT	1.0494	1.0385	1.0000	0.2130
05300 CEMENT & CONCRETE PRODUCTS	1.0392	1.0390	1.0000	0.0066
05400 OTHER NON-METALLIC MIN. PRODS.	1.0464	1.0341	1.0000	0.2660
05500 FUELS & PETROLEUM	1.0179	1.0160	1.0000	0.1038
05600 OTHER PETROLEUM & COAL PROD.	1.0223	1.0173	1.0000	0.1922
05700 INDUSTRIAL CHEMICALS	1.0356	1.0274	1.0000	0.2262
05800 FERTILIZERS	1.0342	1.0277	1.0000	0.1894
05900 PHARMACEUTICALS	1.0500	1.0411	1.0000	0.1782
06000 OTHER CHEMICAL PRODUCTS	1.0414	1.0366	1.0000	0.1224
06100 SCIENTIFIC EQUIPMENT	1.0482	1.0137	1.0000	0.7142
06200 PLASTIC PRODUCTS	1.0444	1.0332	1.0000	0.2509
06300 OTHER MANUFACTURED PRODUCTS	1.0496	1.0359	1.0000	0.2777
06400 RESIDENTIAL DWELLINGS	1.0499	1.0499	1.0000	0.0
06500 NON-RESIDENTIAL BUILDINGS	1.0492	1.0492	1.0000	0.0
06600 ROADS, HIGHWAYS & AIRSTRIPS	1.0453	1.0453	1.0000	0.0
06700 GAS & OIL FACILITIES	1.0492	1.0492	1.0000	0.0
06800 DAMS & IRRIGATION PROJECTS	1.0497	1.0497	1.0000	0.0
06900 RR, TELEPHONE & TELEGRAPH INST.	1.0514	1.0514	1.0000	0.0
07000 OTHER ENGINEERING STRUCTURES	1.0502	1.0502	1.0000	0.0
07100 REPAIR CONSTRUCTION	1.0669	1.0669	1.0000	0.0
07200 TRANSPORTATION SERVICES	1.0523	1.0509	1.0000	0.0245
07300 TRANSPORTATION MARGINS	1.0528	1.0528	1.0000	0.0
07400 COMMUNICATION	1.0529	1.0524	1.0000	0.0059
07500 ELECTRIC POWER	1.0282	1.0280	1.0000	0.0082
07600 GAS & PIPELINE MARGINS	1.0177	1.0177	1.0000	0.0
07700 OTHER UTILITIES	1.0426	1.0426	1.0000	0.0
07800 WHOLESALE TRADE	1.0524	1.0524	1.0000	0.0
07900 RETAIL TRADE	1.0519	1.0519	1.0000	0.0
08000 FINANCE, INS., & REAL ESTATE	1.0361	1.0353	1.0000	0.0232
08100 IMPUTED RENT	1.0091	1.0091	1.0000	0.0
08200 PERSONAL SERVICES	1.0425	1.0416	1.0000	0.0199
08300 BUSINESS SERVICES	1.0474	1.0433	1.0000	0.0867
08400 DUMMY	1.0390	1.0390	1.0000	0.0000
08500 NON-COMPETING IMPORTS	1.0000	1.0000	1.0000	1.0000
08600 BALANCE OF PAYMENTS ADJUSTMENT	1.0000	0.0	0.0	0.0
08700 INCOME & EXPENDITURE ACC'T ADJ.	1.0000	0.0	0.0	0.0
08800 GOVERNMENT GOODS & SERVICES	1.0000	0.0	0.0	0.0
08900 INDIRECT COMMODITY TAXES	1.0000	0.0	0.0	0.0
09000 SUBSIDIES	1.0000	0.0	0.0	0.0
09100 OTHER INDIRECT TAXES	1.0000	0.0	0.0	0.0
09200 WAGES & SALARIES	1.0000	0.0	0.0	0.0
09300 SUPPLEMENTARY LABOUR INCOME	1.0000	0.0	0.0	0.0
09400 NET INCOME OF UNINCORP. BUSINESS	1.0000	0.0	0.0	0.0
09510 HOUSEHOLD INVESTMENT INCOME	1.0000	0.0	0.0	0.0
09520 DEPLETION & MINING WRITE-OFFS	1.0000	0.0	0.0	0.0
09530 CAPITAL COST ALLOWANCE	1.0000	0.0	0.0	0.0
09540 OTHER SURPLUS	1.0000	0.0	0.0	0.0
09600 TOTAL	102.5744	89.0541	86.0000	13.4628

00000 INPUT-OUTPUT INDUSTRY AGGREGATN

PG

00100 AGRICULTURE	
00200 FORESTRY	1.0038
00300 FISHING & TRAPPING	1.0035
00400 PETROLEUM & GAS WELLS	1.0061
00500 MINES	1.0013
00600 MEAT PRODUCTS INDUSTRIES	1.0038
00700 DAIRY PRODUCTS INDUSTRIES	1.0048
00800 FISH PRODUCTS INDUSTRIES	1.0045
00900 GRAIN MILLS	1.0075
01000 OTHER FOOD & SOFT DRINK IND.	1.0082
01100 ALCOHOLIC BEVERAGE IND.	1.0114
01200 TOBACCO INDUSTRIES	1.0050
01300 RUBBER INDUSTRIES	1.0042
01400 LEATHER INDUSTRIES	1.0116
01500 TEXTILE INDUSTRIES	1.0133
01600 CLOTHING MANUFACTURERS	1.0134
01700 WOOD INDUSTRIES	1.0126
01800 FURNITURE MANUFACTURERS	1.0047
01900 PULP & PAPER INDUSTRIES	1.0076
02000 PRINTING & PUBLISHING	1.0043
02100 IRON & STEEL	1.0038
02200 NON-FERROUS METALS	1.0082
02300 METAL FABRICATING	1.0095
02400 MACHINERY	1.0079
02500 MOTOR VEHICLES	1.0102
02600 OTHER TRANSPORTATION EQUIPMENT	1.0196
02700 ELECTRICAL PRODUCTS	1.0114
02800 NON-METALLIC MINERAL PRODUCTS	1.0097
02900 PETROLEUM & COAL PRODUCTS	1.0062
03000 INDUSTRIAL CHEMICALS	1.0172
03100 CHEMICAL PRODUCTS	1.0080
03200 MISCELLANEOUS MANUFACTURERS	1.0092
03300 CONSTRUCTION	1.0091
03400 TRANSPORTATION & STORAGE	1.0059
03500 COMMUNICATION	1.0032
03600 UTILITIES	1.0015
03700 TRADE	1.0015
03800 FINANCE, INS., & REAL ESTATE	1.0021
03900 OWNER-OCCUPIED DWELLINGS	1.0014
04000 OTHER SERVICES	1.0005
04100 DUMMY INDUSTRIES	1.0030
04200 TOTAL	1.0089
	41.2900

COMMODITY PRICE INDEXES(PQD AND PQ), PM'S AND MU'S (THIRD EXPERIMENT)

00000 INPUT-OUTPUT COMMOD. AGGN.SP	PQD	PQ	PM	MU
00100 GRAIN	1.0038	1.0051	1.0500	0.0269
00200 OTHER AGRICULTURE	1.0038	1.0082	1.0500	0.0934
00300 FOREST PRODUCTS	1.0035	1.0047	1.0500	0.0240
00400 FISHING & TRAPPING PRODUCTS	1.0061	1.0143	1.0500	0.1873
00500 CRUDE PETROLEUM	1.0013	1.0234	1.0500	0.4529
00600 NATURAL GAS	1.0013	1.0136	1.0500	0.2519
00700 SULPHUR	1.0017	1.0256	1.0500	0.4941
00800 COAL	1.0040	1.0368	1.0500	0.7119
00900 IRON ORE	1.0062	1.0391	1.0500	0.7522
01000 ASBESTOS	1.0035	1.0142	1.0500	0.2289
01100 OTHER MINERALS	1.0038	1.0075	1.0500	0.0863
01200 MEAT PRODUCTS	1.0047	1.0069	1.0500	0.0505
01300 DAIRY PRODUCTS	1.0046	1.0055	1.0500	0.0214
01400 FISH PRODUCTS	1.0075	1.0130	1.0500	0.1287
01500 FEED	1.0103	1.0107	1.0500	0.0097
01600 FLOUR & WHEAT	1.0046	1.0046	1.0500	0.0
01700 OTHER GRAIN MILL PRODUCTS	1.0064	1.0093	1.0500	0.0669
01800 BAKERY PRODUCTS	1.0060	1.0068	1.0500	0.0190
01900 SOFT DRINKS	1.0055	1.0059	1.0500	0.0078
02000 OTHER FOOD PRODUCTS	1.0137	1.0187	1.0500	0.1448
02100 ALCOHOLIC BEVERAGES	1.0049	1.0126	1.0500	0.1718
02200 TOBACCO	1.0042	1.0059	1.0500	0.0354
02300 TIRES & TUBES	1.0131	1.0158	1.0500	0.0725
02400 OTHER RUBBER PRODUCTS	1.0100	1.0214	1.0500	0.2844
02500 LEATHER PRODUCTS	1.0132	1.0191	1.0500	0.1648
02600 YARNS & MAN-MADE FIBRES	1.0127	1.0207	1.0500	0.2159
02700 FABRICS	1.0136	1.0260	1.0500	0.3432
02800 TEXTILE PRODUCTS	1.0130	1.0184	1.0500	0.1467
02900 CLOTHING	1.0123	1.0153	1.0500	0.0792
03000 LUMBER & PLYWOOD	1.0045	1.0099	1.0500	0.1201
03100 WOOD PRODUCTS	1.0052	1.0069	1.0500	0.0386
03200 FURNITURE & FIXTURES	1.0076	1.0104	1.0500	0.0664
03300 PULP&PAPER DUMMY & INTRA-TRANSFE	1.0032	1.0032	1.0500	0.0
03400 PULP	1.0039	1.0075	1.0500	0.0790
03500 NEWSPRINT	1.0047	1.0048	1.0500	0.0039
03600 OTHER PAPER STOCK	1.0047	1.0082	1.0500	0.0778
03700 INDUSTRIAL PAPER PRODUCTS	1.0067	1.0102	1.0500	0.0812
03800 HOUSEHOLD PAPER PRODUCTS	1.0069	1.0091	1.0500	0.0522
03900 PRINTED MATTER	1.0039	1.0089	1.0500	0.1084
04010 IRON & STEEL DUMMY & INTRA-TRANS	1.0076	1.0076	1.0500	0.0
04020 IRON & STEEL PRODUCTS	1.0086	1.0150	1.0500	0.1529
04100 ALUMINUM PRODUCTS	1.0147	1.0211	1.0500	0.1773
04200 COPPER & COPPER ALLOY PRODUCTS	1.0075	1.0088	1.0500	0.0305
04300 NICKEL PRODUCTS	1.0072	1.0183	1.0500	0.2606
04400 OTHER NON-FERROUS METAL PRODUCTS	1.0087	1.0218	1.0500	0.3172
04500 METAL FABRICATED PRODUCTS	1.0082	1.0142	1.0500	0.1433
04600 AGRICULTURAL MACHINERY	1.0117	1.0358	1.0500	0.6304
04700 OTHER INDUSTRIAL MACHINERY	1.0091	1.0303	1.0500	0.5182
04800 MOTOR VEHICLES	1.0219	1.0291	1.0500	0.2567
04900 MOTOR VEHICLE PARTS	1.0140	1.0354	1.0500	0.6003

COMMODITY PRICE INDEXES(PQD AND PQ), PM'S AND MU'S (THIRD EXPERIMENT)

00000 INPUT-OUTPUT COMMOD. AGGN.SE	PQD	PQ	PM	MU
05000 OTHER TRANSPORT EQUIPMENT	1.0110	1.0224	1.0500	0.2987
05100 APPLIANCES	1.0122	1.0224	1.0500	0.2680
05200 OTHER ELECTRICAL EQUIPMENT	1.0089	1.0176	1.0500	0.2130
05300 CEMENT & CONCRETE PRODUCTS	1.0046	1.0049	1.0500	0.0066
05400 OTHER NON-METALLIC MIN. PRODS.	1.0087	1.0195	1.0500	0.2660
05500 FUELS & PETROLEUM	1.0174	1.0207	1.0500	0.1038
05600 OTHER PETROLEUM & COAL PROD.	1.0143	1.0211	1.0500	0.1922
05700 INDUSTRIAL CHEMICALS	1.0084	1.0177	1.0500	0.2262
05800 FERTILIZERS	1.0068	1.0150	1.0500	0.1894
05900 PHARMACEUTICALS	1.0070	1.0147	1.0500	0.1782
06000 OTHER CHEMICAL PRODUCTS	1.0103	1.0151	1.0500	0.1224
06100 SCIENTIFIC EQUIPMENT	1.0098	1.0384	1.0500	0.7142
06200 PLASTIC PRODUCTS	1.0095	1.0197	1.0500	0.2509
06300 OTHER MANUFACTURED PRODUCTS	1.0084	1.0199	1.0500	0.2777
06400 RESIDENTIAL DWELLINGS	1.0056	1.0056	1.0500	0.0
06500 NON-RESIDENTIAL BUILDINGS	1.0070	1.0070	1.0500	0.0
06600 ROADS, HIGHWAYS & AIRSTRIPS	1.0055	1.0055	1.0500	0.0
06700 GAS & OIL FACILITIES	1.0078	1.0078	1.0500	0.0
06800 DAMS & IRRIGATION PROJECTS	1.0061	1.0061	1.0500	0.0
06900 RR, TELEPHONE & TELEGRAPH INST.	1.0074	1.0074	1.0500	0.0
07000 OTHER ENGINEERING STRUCTURES	1.0072	1.0072	1.0500	0.0
07100 REPAIR CONSTRUCTION	1.0034	1.0034	1.0500	0.0
07200 TRANSPORTATION SERVICES	1.0034	1.0045	1.0500	0.0245
07300 TRANSPORTATION MARGINS	1.0041	1.0041	1.0500	0.0
07400 COMMUNICATION	1.0015	1.0018	1.0500	0.0059
07500 ELECTRIC POWER	1.0018	1.0022	1.0500	0.0082
07600 GAS & PIPELINE MARGINS	1.0008	1.0008	1.0500	0.0
07700 OTHER UTILITIES	1.0039	1.0039	1.0500	0.0
07800 WHOLESALE TRADE	1.0036	1.0036	1.0500	0.0
07900 RETAIL TRADE	1.0020	1.0020	1.0500	0.0
08000 FINANCE, INS., & REAL ESTATE	1.0015	1.0027	1.0500	0.0232
08100 IMPUTED RENT	1.0005	1.0005	1.0500	0.0
08200 PERSONAL SERVICES	1.0035	1.0044	1.0500	0.0199
08300 BUSINESS SERVICES	1.0024	1.0065	1.0500	0.0867
08400 DUMMY	1.0105	1.0105	1.0500	0.0000
08500 NCN-COMPETING IMPORTS	1.0000	1.0000	1.0000	1.0000
08600 BALANCE OF PAYMENTS ADJUSTMENT	1.0000	0.0	0.0	0.0
08700 INCOME & EXPENDITURE ACC'T ADJ.	1.0000	0.0	0.0	0.0
08800 GOVERNMENT GOODS & SERVICES	1.0000	0.0	0.0	0.0
08900 INDIRECT COMMODITY TAXES	1.0000	0.0	0.0	0.0
09000 SUBSIDIES	1.0000	0.0	0.0	0.0
09100 OTHER INDIRECT TAXES	1.0000	0.0	0.0	0.0
09200 WAGES & SALARIES	1.0000	0.0	0.0	0.0
09300 SUPPLEMENTARY LABOUR INCOME	1.0000	0.0	0.0	0.0
09400 NET INCOME OF UNINCORP. BUSINESS	1.0000	0.0	0.0	0.0
09510 HOUSEHOLD INVESTMENT INCOME	1.0000	0.0	0.0	0.0
09520 DEPLETION & MINING WRITE-OFFS	1.0000	0.0	0.0	0.0
09530 CAPITAL COST ALLOWANCE	1.0000	0.0	0.0	0.0
09540 OTHER SURPLUS	1.0000	0.0	0.0	0.0
09600 TOTAL	99.5965	87.1120	90.2498	13.4628

0000 INPUT-OUTPUT INDUSTRY AGGREGATE

PG

00100 AGRICULTURE	1.0045
00200 FORESTRY	1.0043
00300 FISHING & TRAPPING	1.0088
00400 PETROLEUM & GAS WELLS	1.0015
00500 MINES	1.0046
00600 MEAT PRODUCTS INDUSTRIES	1.0192
00700 DAIRY PRODUCTS INDUSTRIES	1.0251
00800 FISH PRODUCTS INDUSTRIES	1.0321
00900 GRAIN MILLS	1.0192
01000 OTHER FOOD & SOFT DRINK IND.	1.0346
01100 ALCOHOLIC BEVERAGE IND.	1.0302
01200 TOBACCO INDUSTRIES	1.0232
01300 RUBBER INDUSTRIES	1.0416
01400 LEATHER INDUSTRIES	1.0509
01500 TEXTILE INDUSTRIES	1.0450
01600 CLOTHING MANUFACTURERS	1.0521
01700 WOOD INDUSTRIES	1.0414
01800 FURNITURE MANUFACTURERS	1.0529
01900 PULP & PAPER INDUSTRIES	1.0385
02000 PRINTING & PUBLISHING	1.0582
02100 IRON & STEEL	1.0382
02200 NON-FERROUS METALS	1.0219
02300 METAL FABRICATING	1.0494
02400 MACHINERY	1.0464
02500 MOTOR VEHICLES	1.0351
02600 OTHER TRANSPORTATION EQUIPMENT	1.0530
02700 ELECTRICAL PRODUCTS	1.0485
02800 NON-METALLIC MINERAL PRODUCTS	1.0387
02900 PETROLEUM & COAL PRODUCTS	1.0096
03000 INDUSTRIAL CHEMICALS	1.0287
03100 CHEMICAL PRODUCTS	1.0376
03200 MISCELLANEOUS MANUFACTURERS	1.0468
03300 CONSTRUCTION	1.0145
03400 TRANSPORTATION & STORAGE	1.0038
03500 COMMUNICATION	1.0028
03600 UTILITIES	1.0010
03700 TRADE	1.0040
03800 FINANCE, INS., & REAL ESTATE	1.0025
03900 OWNER-OCCUPIED DWELLINGS	1.0012
04000 OTHER SERVICES	1.0049
04100 DUMMY INDUSTRIES	1.0160
04200 TOTAL	42.0925

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COMMODITY PRICE INDEXES(PQD AND PQ), PM'S AND MU'S (FOURTH EXPERIMENT)

00000 INPUT-OUTPUT COMMOD. AGGN.SB	PQD	PQ	PM	MU
00100 GRAIN	1.0045	1.0044	1.0000	0.0269
00200 OTHER AGRICULTURE	1.0046	1.0041	1.0000	0.0934
00300 FOREST PRODUCTS	1.0049	1.0047	1.0000	0.0240
00400 FISHING & TRAPPING PRODUCTS	1.0088	1.0071	1.0000	0.1873
00500 CRUDE PETROLEUM	1.0015	1.0008	1.0000	0.4529
00600 NATURAL GAS	1.0015	1.0011	1.0000	0.2519
00700 SULPHUR	1.0026	1.0013	1.0000	0.4941
00800 COAL	1.0039	1.0011	1.0000	0.7119
00900 IRON ORE	1.0081	1.0020	1.0000	0.7522
01000 ASBESTOS	1.0051	1.0039	1.0000	0.2289
01100 OTHER MINERALS	1.0053	1.0044	1.0000	0.0863
01200 MEAT PRODUCTS	1.0170	1.0162	1.0000	0.0505
01300 DAIRY PRODUCTS	1.0249	1.0243	1.0000	0.0214
01400 FISH PRODUCTS	1.0321	1.0280	1.0000	0.1287
01500 FEED	1.0192	1.0191	1.0000	0.0097
01600 FLOUR & WHEAT	1.0168	1.0168	1.0000	0.0
01700 OTHER GRAIN MILL PRODUCTS	1.0243	1.0229	1.0000	0.0669
01800 BAKERY PRODUCTS	1.0453	1.0445	1.0000	0.0190
01900 SOFT DRINKS	1.0478	1.0475	1.0000	0.0078
02000 OTHER FOOD PRODUCTS	1.0281	1.0243	1.0000	0.1448
02100 ALCOHOLIC BEVERAGES	1.0303	1.0261	1.0000	0.1718
02200 TOBACCO	1.0232	1.0225	1.0000	0.0354
02300 TIRES & TUBES	1.0373	1.0345	1.0000	0.0725
02400 OTHER RUBBER PRODUCTS	1.0458	1.0327	1.0000	0.2844
02500 LEATHER PRODUCTS	1.0509	1.0430	1.0000	0.1648
02600 YARNS & MAN-MADE FIBRES	1.0439	1.0346	1.0000	0.2159
02700 FABRICS	1.0446	1.0294	1.0000	0.3432
02800 TEXTILE PRODUCTS	1.0393	1.0336	1.0000	0.1467
02900 CLOTHING	1.0515	1.0475	1.0000	0.0792
03000 LUMBER & PLYWOOD	1.0388	1.0341	1.0000	0.1201
03100 WOOD PRODUCTS	1.0449	1.0431	1.0000	0.0386
03200 FURNITURE & FIXTURES	1.0518	1.0484	1.0000	0.0664
03300 PULP&PAPER DUMMY & INTRA-TRANSFE	1.0405	1.0405	1.0000	0.0
03400 PULP	1.0310	1.0286	1.0000	0.0790
03500 NEWSPRINT	1.0354	1.0352	1.0000	0.0039
03600 OTHER PAPER STOCK	1.0356	1.0328	1.0000	0.0778
03700 INDUSTRIAL PAPER PRODUCTS	1.0441	1.0406	1.0000	0.0812
03800 HOUSEHOLD PAPER PRODUCTS	1.0407	1.0384	1.0000	0.0522
03900 PRINTED MATTER	1.0578	1.0515	1.0000	0.1084
04010 IRON & STEEL DUMMY & INTRA-TRANS	1.0385	1.0385	1.0000	0.0
04020 IRON & STEEL PRODUCTS	1.0386	1.0326	1.0000	0.1529
04100 ALUMINUM PRODUCTS	1.0310	1.0250	1.0000	0.1773
04200 COPPER & COPPER ALLCY PRODUCTS	1.0196	1.0189	1.0000	0.0305
04300 NICKEL PRODUCTS	1.0175	1.0128	1.0000	0.2606
04400 OTHER NON-FERROUS METAL PRODUCTS	1.0239	1.0158	1.0000	0.3172
04500 METAL FABRICATED PRODUCTS	1.0488	1.0418	1.0000	0.1433
04600 AGRICULTURAL MACHINERY	1.0460	1.0170	1.0000	0.6304
04700 OTHER INDUSTRIAL MACHINERY	1.0451	1.0219	1.0000	0.5182
04800 MOTOR VEHICLES	1.0316	1.0235	1.0000	0.2567
04900 MOTOR VEHICLE PARTS	1.0432	1.0175	1.0000	0.6003

COMMODITY PRICE INDEXES(PQD AND PQ), PM'S AND MU'S (FOURTH EXPERIMENT)

00000 INPUT-OUTPUT COMMOD. AGGN.SE	PQD	PQ	PM	MU
05000 OTHER TRANSPORT EQUIPMENT	1.0520	1.0356	1.0000	0.2987
05100 APPLIANCES	1.0457	1.0334	1.0000	0.2680
05200 OTHER ELECTRICAL EQUIPMENT	1.0489	1.0379	1.0000	0.2130
05300 CEMENT & CONCRETE PRODUCTS	1.0329	1.0327	1.0000	0.0066
05400 OTHER NON-METALLIC MIN. PRODS.	1.0431	1.0316	1.0000	0.2660
05500 FUELS & PETROLEUM	1.0094	1.0085	1.0000	0.1038
05600 OTHER PETROLEUM & COAL PROD.	1.0131	1.0100	1.0000	0.1922
05700 INDUSTRIAL CHEMICALS	1.0301	1.0232	1.0000	0.2262
05800 FERTILIZERS	1.0198	1.0161	1.0000	0.1894
05900 PHARMACEUTICALS	1.0426	1.0350	1.0000	0.1782
06000 OTHER CHEMICAL PRODUCTS	1.0361	1.0320	1.0000	0.1224
06100 SCIENTIFIC EQUIPMENT	1.0478	1.0136	1.0000	0.7142
06200 PLASTIC PRODUCTS	1.0429	1.0321	1.0000	0.2509
06300 OTHER MANUFACTURED PRODUCTS	1.0460	1.0333	1.0000	0.2777
06400 RESIDENTIAL DWELLINGS	1.0157	1.0157	1.0000	0.0
06500 NON-RESIDENTIAL BUILDINGS	1.0164	1.0164	1.0000	0.0
06600 ROADS, HIGHWAYS & AIRSTRIPS	1.0116	1.0116	1.0000	0.0
06700 GAS & OIL FACILITIES	1.0125	1.0125	1.0000	0.0
06800 DAMS & IRRIGATION PROJECTS	1.0159	1.0159	1.0000	0.0
06900 RR, TELEPHONE & TELEGRAPH INST.	1.0168	1.0168	1.0000	0.0
07000 OTHER ENGINEERING STRUCTURES	1.0189	1.0189	1.0000	0.0
07100 REPAIR CONSTRUCTION	1.0089	1.0089	1.0000	0.0
07200 TRANSPORTATION SERVICES	1.0040	1.0039	1.0000	0.0245
07300 TRANSPORTATION MARGINS	1.0039	1.0039	1.0000	0.0
07400 COMMUNICATION	1.0028	1.0028	1.0000	0.0059
07500 ELECTRIC POWER	1.0013	1.0013	1.0000	0.0082
07600 GAS & PIPELINE MARGINS	1.0012	1.0012	1.0000	0.0
07700 OTHER UTILITIES	1.0077	1.0077	1.0000	0.0
07800 WHOLESALE TRADE	1.0100	1.0100	1.0000	0.0
07900 RETAIL TRADE	1.0041	1.0041	1.0000	0.0
08000 FINANCE, INS., & REAL ESTATE	1.0028	1.0027	1.0000	0.0232
08100 IMPUTED RENT	1.0012	1.0012	1.0000	0.0
08200 PERSONAL SERVICES	1.0067	1.0066	1.0000	0.0199
08300 BUSINESS SERVICES	1.0070	1.0067	1.0000	0.0867
08400 DUMMY	1.0201	1.0201	1.0000	0.0000
08500 NON-COMPETING IMPORTS	1.0000	1.0000	1.0000	1.0000
08600 BALANCE OF PAYMENTS ADJUSTMENT	1.0000	0.0	0.0	0.0
08700 INCOME & EXPENDITURE ACC'T ADJ.	1.0000	0.0	0.0	0.0
08800 GOVERNMENT GOODS & SERVICES	1.0000	0.0	0.0	0.0
08900 INDIRECT COMMODITY TAXES	1.0000	0.0	0.0	0.0
09000 SUBSIDIES	1.0000	0.0	0.0	0.0
09100 OTHER INDIRECT TAXES	1.0000	0.0	0.0	0.0
09200 WAGES & SALARIES	1.0000	0.0	0.0	0.0
09300 SUPPLEMENTARY LABOUR INCOME	1.0000	0.0	0.0	0.0
09400 NET INCOME OF UNINCORP. BUSINESS	1.0000	0.0	0.0	0.0
09510 HOUSEHOLD INVESTMENT INCOME	1.0000	0.0	0.0	0.0
09520 DEPLETION & MINING WRITE-OFFS	1.0000	0.0	0.0	0.0
09530 CAPITAL COST ALLOWANCE	1.0000	0.0	0.0	0.0
09540 OTHER SURPLUS	1.0000	0.0	0.0	0.0
09600 TOTAL	101.1771	87.8049	86.0000	13.4628

1.1 AUTHORITY

1.1.1 The Annual Census of Manufactures is collected under the authority of Statistics Act, Chapter 15, Statutes of Canada, 1970-71-72.

This Act provides that:

1.1.2 This report is confidential and cannot be seen except by those persons sworn to secrecy under Section 6 of the Act unless your permission is obtained.

1.1.3 Filing of completed returns by every respondent is compulsory. Failure to comply may result in prosecution.

1.2 REPORTING INSTRUCTIONS

The enclosed Reporting Guide is designed to assist in the completion of this report. The instructions are numbered to correspond to the items to which they refer.

Report for your fiscal year ending between April 1, 1974 and March 31, 1975. Completed questionnaires must be returned within 60 days of receipt.

1.3 OPERATIONS

1.3.1 Did this establishment operate in the reporting year as defined in 1.2 above? Yes No
1 ☐ 2 ☐
If "No" sign in question 1.9 below and return.

1.3.2 Did this establishment go out of business during the reporting year? 1 ☐ 2 ☐

If "Yes", give date _____
and complete this form for the period operated.

1.3.3 Did any change in ownership occur during the reporting year? 1 ☐ 2 ☐

If "Yes", give date _____
and provide information for the full reporting year.
If this is not possible provide information for the period operated and give name and address of respondent to contact for balance of information.

(name)

(address)

1.4 FEDERAL PROVINCIAL AGREEMENTS

In accordance with provisions of the Statistics Act, agreements have been made with provincial governments for the exchange of data reported herein. For details see item 1.4 in the enclosed Reporting Guide.

If the above information about the location of your plant is either incorrect or incomplete then please enter changes and/or additions above.

(a) if in urban areas: street and number, municipality name, province, and postal code.

(b) if in rural areas: concession and lot, township, range and section number; or direction and distance from a town, lake, highway, etc. and province.

1.5 LOCATION OF THIS ESTABLISHMENT

1.5.1 Has the location of this establishment changed from last year? Yes No
1 ☐ 2 ☐

1.6 TYPE OF ORGANIZATION (Check one)

Individual Ownership	Partnership	Incorporated Company	Incorporated Co-operative	Unincorporated Co-operative
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

1.6.2 Does this represent a change in organization from your last report? Yes No
1 ☐ 2 ☐

Date of change _____ 19 _____

1.7 NATURE OF BUSINESS (describe briefly)

1.7.1 _____

1.7.2 Is this a change from last year? Yes No
1 ☐ 2 ☐

1.8 SEPARATELY LOCATED OFFICES

Does this establishment have a separately located Canadian

1.8.1 Head or Executive Office?* Yes No
1 ☐ 2 ☐

1.8.2 Administrative Office?* 1 ☐ 2 ☐

1.8.3 If "Yes", please give

1.8.4 Head Office Name _____

1.8.5 Address _____

1.8.6 Administrative Office Name _____

1.8.7 Address _____

* Please exclude from this report data for such separately located offices.

1.9 CERTIFICATION

I certify that the information contained herein is substantially complete and correct to the best of my knowledge and belief and covers the fiscal year or period

from _____ to _____

Signature of authorized person

Title

Date

Name of person to contact regarding this report

Address including postal code
(if different from mailing address above)

Telephone

Area code

Number

Extension

Telex

- 2.1.5 Inventory of goods in process
- 2.1.6 Inventory of finished products
- 2.2 Inventory of goods purchased for resale in same condition as purchased
- 2.3 Other non-manufacturing inventory (specify)
- 2.4
- 2.5 Total inventory of this establishment

3. UNFILLED ORDERS (refer to Instruction 3 in the Reporting Guide)

- 3.1 Report value (or give your best estimate) as of December 31, 1974 Yes No
 3.2 Do you normally have a backlog (not shipping backlog) of unfilled orders? 1 ☐ 2 ☐

4. BASIS OF VALUATION (refer to Instruction 4 in the Reporting Guide)

4.1 Fuel, raw materials, containers, supplies, etc. (as reported in questions 5 and 6)

- 4.1.1 Are you reporting consumption as requested? 1 ☐
 OR
 Are you reporting purchases of these items? 2 ☐

4.2 Products (as reported in question 8)

- 4.2.1 Are you reporting value of shipments as requested? 1 ☐
 OR
 Are you reporting value of production? 2 ☐

4.2.2 Are the reported values at: (Check more than one, if applicable)

- Cost? 1 ☐
 Book transfer value? 2 ☐
 Final selling price? 3 ☐
 Other (specify) 4 ☐

5. CONSUMPTION OF PURCHASED FUEL AND ELECTRICITY (refer to Instruction 5 in the Reporting Guide)

Kind	Commodity code for Statistics Canada use	Unit of measure	Quantity used	Cost at this establishment Canadian dollars (omit cents)
5.1 Coal and coke	261	ton		
5.2 Natural gas	263 1	1000 cu. ft.		
5.3 Gasoline	431	Cdn. gal.		
5.4 Kerosene, stove oil (No. 1 fuel oil)	432 2	"		
5.5 Diesel oil	432 3	"		
5.6 Light fuel oil (Nos. 2 and 3)	432 4	"		
5.7 Heavy fuel oil (Nos. 4, 5 and 6)	432 5	"		
5.8 Liquefied petroleum, gases (propane, butane, etc.)	436 1	"		
5.9 Electricity purchased (include service charge)	497 1	1000 kwh.		
5.10 Other fuel (include steam purchased) (specify)				
5.11 Total fuel and electricity				

5.12 ELECTRIC GENERATING FACILITIES

- Did this establishment during the reporting period operate generating facilities with nameplate rating of more than 500 kw? Yes No
 1 ☐ 2 ☐

